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## TRANS-URETHRAL PROSTATECTOMY

REX BOLEND, B.S., M.D.  
OKLAHOMA CITY

I wish to state in the beginning, this paper is presented by the urological department, University Hospital—I am merely acting as spokesman—the material herein presented represents as nearly as can be determined the status of trans-urethral resection at this time.

Until some better method appears trans-urethral prostatectomy is here to stay; at the present moment with its numerous methods, machines, and technique, nothing is stable; it is however the beginning of a new era in urology, and brings to us the first advance since Caulk came out with the cautery punch about 1920. In this larger field we must look upon all sides and weigh carefully all the advantages and disadvantages, we must be determined by time, experience, and impersonal analysis of results as compared by present day surgical removal, as it is at present, or may be perfected.

The journals (urological publications at least) are flooded with monographs on this subject. Every so often the medical profession is confronted with some new method or remedy which is claimed as miraculous in its therapeutic value and which like the candle, lighted at both ends, soon burns out and is gone. Most of you remember ten years ago the high hopes we had for the cure or arrest of cancer of bladder and prostate with radium. Mercurochrome and Hexylresorcinol held the center of the stage for a brief period, and now the dye twins pyridium and serenium are doing a Kentucky derby before us, and in my opinion will be "also rans." One more factor that must not be overlooked is the tremendous appeal this method will have on both doctor and patient. Its advertising possibilities are great and every owner of a cystoscope is too liable to pro-

cure inadequate and unreliable equipment and attempt to operate, only to fail, and then condemn it. So the final analysis must come from calm, unbiased, open minded, competent observers after consideration of all the facts.

### REVIEW

It is well at this time to call attention to a few accepted facts about the prostate gland and its role in urinary obstruction.

1. Prostatic hypertrophy or prostatism in its self is a harmless tumor until it becomes an obstruction to the urine out-put and then it produces the damage by causing a residual urine which becomes infected and gives rise to the usual train of symptoms well known to this condition, we feel it is important to keep this fact in mind, when considering the operation for prostatectomy. Too often it seems the hypertrophied prostate is considered in the light of a foreign body to be removed.

2. The malignant prostate is not routinely operated for entire removal, certain cases can be demonstrated to have one or more lobes causing obstruction and in these the surgeon is justified to attempt bladder drainage but as a rule the malignant prostate is not removed,

### OBJECTIONS TO SURGICAL REMOVAL

1. Probable loss of sex function.
2. Undue delay due to the above.
3. Poor risk, due to delay.
4. Long preparation period and hospitalization.
5. Hemorrhage.
6. Shock.

In trans-urethral resection all of the above listed objections are modified or the hazard almost completely eliminated. It is our belief that the real reason for the horror of this operation is the loss of sex function. The operation is delayed so long by both patient and doctor that the patient's chances for recovery due to the irreparable damage to the kidney and heart

are reduced to a minimum. With this obstacle removed we could resect these cases much earlier, when the surgical risk would be infinitely better. This automatically eliminates the procrastination thus rising out of operating risk. We are unable to say definitely at this time that with the resection method the patient would retain his sexual power, but anatomically and surgically there is no reason to believe that he should not, because that part of the gland which carries the venous plexus necessary in this mechanical phenomenon is not destroyed, (or need not be).

While we carefully prepare the patient and give him the same "urological work out" as in prostatectomy; namely: bladder drainage, by indwelling catheter until infection is cleared, bladder visualization to determine the type of enlargement or any other anomalies, renal function as determined by blood chemistry, and general treatment during this process to build resistance and increase clotting time. Still the process is not so long, and no preliminary supra pubic drainage with its resultant discomforts are needed.

#### QUOTATIONS

We believe the best cross section we can give you at this time is to read verbatim the conclusions of some of the most careful operators using this method of prostatectomy—we have purposely omitted our personal experiences.

Theodore M. Davis, M.D., of Charlotte, North Carolina, 339 cases in five years and one month, classified as follows:

Contracture of vesical orifice .....	21
Median lobe of bar .....	37
Unilateral lobe .....	8
Unilateral and median lobe .....	39
Bilateral lobes .....	58
Bilateral and median lobes .....	62
Carcinoma .....	40

makes these conclusions:

Prostatectomy with its potentially high mortality and morbidity rate, has not attained the ideal in the correction of prostatic obstruction.

Resection reduces the removal of the obstruction to a minor operation as compared with prostatectomy.

The final results following resection are equal, if not superior, to those obtained by prostatectomy.

The incidence of recurrence following resection as claimed by those advocating prostatectomy has not been substantiated clinically. A recurrence morbidity of 23 to

1 in favor of resection is reported in this series of cases.

George R. Livermore, M.D., Memphis, Tennessee, draws the following conclusions but does not specify the number of cases operated.

1. Prostatic resection marks a distinct advance in the treatment and relief of hypertrophy of the prostate.

2. The ease of its performance, the lack of shock and dangerous complications, and the diminished suffering to the patient should commend it to all prostatists, as well as to all urologists.

3. The McCarthy unit has proved eminently satisfactory.

4. It may be necessary to repeat resection, but two resections are far preferable to one prostatectomy.

5. Resection is such an advance that the writer believes prostatectomy will soon be reserved for only the very large intravesical and intra-urethral hypertrophies whose immense size render resection impossible.

6. Hemorrhage is still a factor to be considered and every effort should be exerted to check it at the time of operation and to prevent its recurrence later.

7. Complications following resection occur less and are far less serious than those following prostatectomy.

Charles Pierre Mathe, M.D., F.A.C.S., San Francisco, California, writing for the urological department draws the following conclusions in 102 cases:

1. There is an increasing field for the employment of the operative cystoscope in the relief of prostatism which embraces dividing, tunnelling, or punching the obstruction prostatic bar by the electro-cautery, vesical neck resection or the punch. These benign endo-vesical procedures can always be applied in order to relieve hypertrophy consisting of fibrosis of the collar type, sclerosis due to atrophy and most cases of median lobe hypertrophy. This method is also applicable to increasingly large numbers of cases presenting the early stages of hypertrophy of the median and lateral lobes and also to advanced cases presenting the early stages of hypertrophy of the median and lateral lobes and also to advanced cases presenting bad surgical risks. With intelligent choice of the methods described it can be applied to a large number of so-called borderline



cases which are commonly subjected to prostatectomy.

2. It does not replace prostatectomy which should be reserved for those cases in which the gland has attained considerable size, and for those in which it had been necessary to perform cystotomy in order to relieve urinary retention.

3. It is a simple procedure that can be done under local anesthesia and is followed by little or no general reaction. Epididymitis can be prevented by partial vasectomy. Primary hemorrhage is easily controlled at the time of operation and secondary hemorrhage can be prevented by proper post-operative care. No mortality, pulmonary embolus or incontinence occurred in any of these cases. The sexual power was not weakened and the reproductive power was preserved in the majority of the 102 cases.

Alfred I. Folsom, M.D., Dallas, Texas, reports on a series of 50 cases having the following to say:

The period of convalescence of our cases has been remarkably free from the difficulties, only in the very occasional case do we see anything other than a minor febrile reaction.

In three cases we failed to remove enough of the obstruction tissue and had to go back for a second bite. This was embarrassing, but in each case the second trial netted us a good result. With increasing experience this will be lessened except in the very large gland, and in these I have adopted the policy of telling the patient that there is a possibility of having to have two sittings to remove enough tissue.

The results are all that one could expect. In every case except one, the bladder has been restored to an excellent functional condition. I am sure our results are just as good if not better than they were with the prostatectomies. The stream has a good force and there is practically no difficulty in starting and stopping.

William J. Engel, M.D., Cleveland, Ohio, makes the following observations after 48 operations. Sixteen operations with the Sterns resectoscope.

We feel that trans-urethral resection is an excellent procedure for the relief of patients with prostatic obstruction. The advantages are (1) the slight risk and low mortality rate attending the procedure, and (2) the economic advantage of a very much shortened hospital stay.

It is essential that an adequate pre-operative cystoscopic examination be made in order to determine the type of hypertrophy present. Familiarity with each case is essential for the technique of the resectoscope.

There still remains a certain group of patients who cannot be relieved by trans-urethral resection, and in these cases prostatectomy, either supra pubic or perineal, may have to be performed. However, increased experience in this procedure may cause this number to diminish.

Clinton K. Smith, Kansas City, after a series of 20 cases draws these conclusions:

This procedure which we designate as trans-urethral prostatectomy is the outgrowth of the punch idea. In its present state of perfection it bids fair to exceed the fondest hopes of the punch sponsors.

The dreaded operation of prostatectomy has previously deterred many from seeking relief from prostatic obstruction with its attendant irreparable damage to kidneys, heart and general vitality.

#### HISTORY AND TECHNIQUE

In reviewing the history of this work we find just about as many views as there are essays, all are agreed however, that from the early part of the nineteenth century attempts have been made by Guthrie, Home Marcier, Bottini and many others, the real practical advance was started by Hugh Young in 1909 and further advanced by Caulk in 1920, but all of these have had the disadvantage of working blindly. Since that time numerous instruments have appeared in an attempt at removal of the obstructing portion of the prostate. The chief difficulty has been to procure an instrument which would permit sufficient observation and carry a cutting cautery loop, Stern developed such a unit five years ago which was improved by Davis. Since that time numerous instruments, both the cautery and the electrical currents, until at the present time three or four are on the market which seem to have sufficient power to be satisfactory.

The valve tube set machine is considered by disinterested scientists and electrical research engineers a great advance over the spark gap type. A General Electric subsidiary, whose research interests and practical accomplishments are admittedly unexcelled, seems to be convinced that the trend of the best modern engineer-

ing practice is toward the valve tube set machine, but does not market it, since it is commercially unattractive, by reason of the comparatively small volume of business available. In a machine of the spark gap type, the maximum frequency of oscillations possible to be obtained is 1,220,000, while in the valve tube type it is perfectly feasible to obtain a frequency of 2,200,000 oscillations."

We are not prepared at this time to state which is the preferable electrical unit.

The operative technique is so very intricate and in such a state of turmoil at this time that we will make no attempt to present this in detail, but will confine ourselves to showing a few slides demonstrating the manner in which the resection is performed and some motion pictures of the layout made by Doctor Akin.

1010 Medical Arts Bldg.

DISCUSSION: *Dr. Henry Browne, Tulsa.*

Let us remember that prostatic obstructions are not pathological in origin, but due entirely to mechanical opposition in the outflow of urine. The object in any procedure is to relieve this condition and to remove the opposition to the outflow of the urine. This was done first by the the Young punch method, later modified in various ways, and by prostatectomy. We all know what a prostatectomy is. This method is a step further than the punch method, that is, we are able under actual vision with this cutting current to remove the obstructing force in the prostate. We do not remove the entire gland but just that part that is causing obstruction. As for the results, if you read the Journal of the American Medical Association for December of last year, you found in this journal a report by Davis, who is the man who really brought this to a successful conclusion, you saw his report of cases with no mortality, functional result even better than in complete removal of the prostate, average hospital stay of four days, and no cutting. In the same issue there was an article by Dr. Lowsly of New York, who is a very good man. He reported on some hundred cases of prostatectomy with three per cent mortality and a longer stay in the hospital, and same result. If you can get the same result by this, there is no need in talking about a prostatectomy. Dr. Davis presented his first paper before the American Urological Association at New Orleans in June of last year, and everybody in the country

began to use this method. Personally, I believe that in five years prostatectomy will be an obsolete operation. By resection you can take care of ninety per cent of prostatic hypertrophy. The same general tone is obtained from every man who has tried this method. It is a more logical procedure and accomplishes all that has ever been accomplished by prostatectomy. The patient is in the hospital, as Dr. Davis' figures show, an average of four days. The general conclusion of men who have been using it is that we have reached a milestone in the treatment of prostatic obstruction. Take these old complications of prostate where sometimes it is impossible to get in them. With this method you are able to get rid of the obstruction and they don't have any more trouble with drainage, which is one of the greatest difficulties in prostatectomy. I believe this method will become the general procedure, and it is a logical procedure, accomplishing all that prostatectomy ever has done with a minimum of bad results to the patient. I believe as it becomes better known that prostatics will come earlier instead of as a last resort. By this relatively simple and highly technical procedure the obstructing force can be removed and the gland will not have to be removed, since it atrophies and actually grows smaller, as has been found by men who have used it over a period of time. This procedure is carried out entirely under vision, and if you know what you are doing and can watch your bladder and urethra and are conservative, you can do your patient no harm. I believe this is a milestone in the treatment of prostatic obstructions of any kind, and that in time it will largely replace prostatectomy.

*Dr. Bolend:* I have nothing to add.

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ACUTE MYELITIS (MYELOMALACIA): SYNDROME OF OCCLUSION OF ANTERIOR SPINAL ARTERY AT FIFTH CERVICAL CORD SEGMENT

Walter F. Schaller, Archie M. Roberts and Edward F. Stadtherr, San Francisco (Journal A. M. A., November 5, 1932), record two cases of acute myelitis illustrating the syndrome of occlusion of the anterior spinal artery at the fifth cervical cord segment. They discuss in detail the circulation of the spinal cord and point out that extensive acute myelitis occurring in the lower cervical cord segments produces a definite clinical picture: flaccid paralysis of the upper extremities with subsequent atrophies and contractures, spastic paralysis of the trunk and lower extremities and impairment of pain and temperature sensibility below the level of the lesion.



STEREOSCOPIC TREATMENT OF  
HETEROPHORIA\* ✓

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W. A. HUBER, M.D.  
TULSA

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The question of whether the two eyes are properly harnessed together so that binocular single vision, without discomfort, is possible, is a very important responsibility of every refractionist. The fact that a patient sees clearly monocularly does not by any means indicate that he or she will have comfortable binocular single vision.

Binocular single vision is normal in the human race. It is made possible by: (1) the partial decussation of the retinal fibers in the chiasm, so that the brain can receive impressions from corresponding retinal points as a single impression; (2) by means of cerebral centers governing conjugate movements, so that the eyes may at all times be placed to receive impressions on corresponding retinal points; (3) by reason of a fusion faculty, which enables the individual to superimpose his foveal images and make them one.

In a study of binocular single vision, inasmuch as an object which falls on corresponding retinal points is received as a single impression in the cortical visual center, one might on first thought regard the act as a simple automatic act, which needs no further explanation. That it is more than a simple automatic act is best demonstrated by a prism experiment. If during this act a four diopter prism is placed before one eye, base in, the discomfort caused by the displacement of the image of this eye, is followed unconsciously by a corresponding rotation of the eye outward and singleness of vision is restored. There is then a desire or a love for single vision. It is not purely an automatic act, but an active definite effort toward a definite end. This desire for singleness of vision we call a fusion faculty.

Whether we call the force which impels to fusion a "fusion faculty" or a "fusion center" is purely an academic question with the weight of the argument in favor of the former. We know of no such center and it is safe, therefore, to speak of a "fusion faculty." Without such an overruling guidance, the necessarily exact coordination is inconceivable. The frequent

clinical experience, that loss of sight of one eye is often followed by divergence, is an unanswerable argument for the importance of the fusion faculty in keeping eyes straight, and it plays quite as important a part in the production and the cure of those tendencies to turn, grouped under the name heterophoria.

A person devoid of a fusion faculty, or with only one eye, learns rapidly fixing the eye on objects to one side, and thus establishes a parallax which enables him to measure the distance by a sort of muscle sense. The inferiority of this sort of estimation of distance, compared with that possible to one with a well developed binocular fusion sense, was shown by Howard at the Mineola experiment station. He claimed that many accidents in landing were due to aviators' deficiency in estimation of depth difference. Just how valuable this faculty is to chauffeurs, engineers and street car motormen has never been critically determined.

While a good fusion faculty is always a valuable possession, and in many walks of life absolutely essential, it is admitted that one sees many patients totally lacking such a sense. These people use each eye separately and are not conscious of any loss, and have not asthenopia from incoordination. Fusion faculty is also a matter of degree. Some patients are able to fuse concrete pictures by a rapid alternation of the two eyes, but have no conception of perspective. Other cases are able to fuse large concrete pictures and have some perspective. The great majority of people can fuse large stereoscopic pictures, but many fail conspicuously when viewing type of the size ordinarily used.

Orthophoria, from which heterophoria is a departure, can be defined as "a tendency for the eyes to set themselves truly for the object of fixation." It is an undue tax on attention which gives to heterophoria its importance. It may be that the symptoms, in a given case, are dependent in part, if not wholly, on errors of refraction; but it is a serious mistake to suppose that eye-strain is always associated with the ciliary muscle. The ciliary muscle is only one of eight muscles connected with each eye and each of the seven other muscles, when called on to do abnormal work, is just as capable of developing symptoms. People who have no symptoms, and yet have heterophoria are possessed of a stable nervous system and are physically strong. The physically weak and

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\*Read at Annual Meeting, Tulsa, May 26, 1932.

the nervously unstable must be sufferers from eye-strain of whatever character. Growing children, especially those that are delicate, when too hard pressed in their school work, almost invariably present some one of the many symptoms of strain,

For his own enlightenment Dr. Wells studied one thousand consecutive cases of patients with eye-strain. He thought that 25 percent needed stereoscopic treatment. For various reasons only 15 per cent needed were so handled. About 85 per cent of those were cured of symptoms or much relieved. In my own work I do not find that many cases for fusion training, however, there are a large number.

I use the Wells method of stereoscopic treatments with his charts and am very enthusiastic about it. This treatment is indicated when the refractive error under cycloplegia is small, (2) in exophoria and convergence insufficiency, (3) in esophoria, (4) when glasses fail to relieve. If the refractive error under cycloplegia be slight, as compared with the heterophoria, one is justified in treating the heterophoria and ignoring the refractive error. In heterophoria I do not treat patients who have no symptoms, but tell them that here is a condition that might need further treatment. Fusion treatment is therefore indicated when proper correction of the patient's refraction, and when general condition is negative, leaves him with uncomfortable symptoms suggestive of eye-strain.

The Wells method is efficient and not too time-consuming for an intelligent handling of the case. The first essential is a phoro-optometer with two revolving prisms and a smooth mechanism for decentering the full-sized plus 10.00 D. spheres from 50 mm. to 70 mm. p. d. The card holder is fixed at 10 cm. thus putting the accommodation at rest. Each millimeter of decentration produces one prism degree just as definitely as the use of a separate prism in the clips.

The fundamental principle of successful stereoscopic muscle training is the insinuation of the prismatic element by decentering strong spheres, the objects remaining fixed. It is because of the smooth motion of the decentering screw for pupillary adjustment that the phoro-optometer is so well adapted for training. The application of the principle of decentering of the spheres for the purpose of introducing extra prismatic effect, as applied to fusion training, is believed to be orig-

inal with Javal, but it has been greatly extended by Wells. In exophoria we exercise by decentering spheres outward, and for esophoria inward.

The patients become interested in the treatment and in helping themselves. There are several series of Wells' chart. Much attention is given series E to develop fusion with perspective. F and G series are for the purpose of eliminating suppression or suspenopsia and developing a refinement of the fusion faculty. Series G is a continuation and amplification of series F. In series F and G there are various control marks which are too numerous to mention here, the examiner has to go through the test with himself, or have someone else manipulate the cards so that he may properly appreciate the significance and marks on each chart. There is something in each half of every chart which is common to both, and necessitates fusion before properly seen by the patient. This series not only determines the quality or refinement of the fusion faculty, but is a splendid exercise to cultivate true binocular vision and admirable for the elimination of suspenopsia. Series H is splendid for developing convergence and relaxing convergence. The I series is for a straight development of convergence, or relaxation of convergence.

If only a slight suppression of one eye is detected during the test, we must remember that the very conditions of the test force the patient's attention to the separate objects for the two eyes, and that under ordinary conditions suppression is probably much more habitual. It is this question of suppression that has made it so difficult to give proper fusion convergence exercises with loose prisms, rotary prisms, or fixed prisms. The reader, if he has practiced duction treatments by any of these methods, can recall cases that would habitually suppress vision in one eye, leaving the operator to continue adding prism power until possibly the object of regard travels so far to one side that it disappears. With stereoscopic treatment this is impossible, because the moment that suppression takes place part of the picture is lost and the patient manifests the suppression by losing part of the picture, which destroys the whole.

The blending of two objects into one is a more desirable and effective treatment for orthoptic training than the breaking of a single object into two. The two eyes



are really a stereoscope, each eye receives a picture a little different from the other. Just as in the ordinary prism exercises, with the eyes fixed on a distant point, the aversion to diplopia is an incentive to increase muscle action, so here the fused image becomes an anchor. With the eyes fastened on a fused image, made up of half pictures, one strongly resists an impulse which tends to pull it to pieces.

Convergence is a function which was only necessary in a comparative yesterday from the viewpoint of the development of the human being, and in the past one hundred years, particularly in the past fifty years, close work of all kind consumes most of the working hours for many thousand people. The development of this fusion convergence is very necessary for binocular comfort when close work is attempted for a considerable period.

In convergence insufficiency we are dealing with an inco-ordination of convergence and accommodation. The nerve impulse sufficient to secure accommodation is insufficient for convergence. To relieve this and to restore co-ordination, it is necessary to incite, associate and to make habitual a greater degree of convergence with a given amount of accommodation. For this reason it has always seemed that exercises which bring into play the accommodation as well as the convergence are illogical, e. g., dot exercises at the reading distance or candle as used by Gould. I never had any results with muscle exercises until I used Wells' method.

Not infrequently one sees a patient who has learned to overcome strong prisms who is still uncomfortable, because his fusion faculty is poor and co-ordination for small objects, like types, inexact. However, usually, when a high development of fusion convergence has been obtained, that patient will successfully pass the test for perspective, suppression and refinement. A patient may display an adduction of 50 degrees but may have an ill-sustained convergence which definitely indicates a poor quality of this function. Fatigue sets in quickly and the patient cannot read for any length of time. I would say that ordinarily at fifty-five to sixty years of age, when a patient is suffering from convergence insufficiency, the best plan is for him to use prisms in his reading glasses. Occasionally I find there is weakness of convergence due to hyperphoria. This

hyperphoria sometimes is not elicited by ordinary test but is found by Wells' chart. With correction of hyperphoria the convergence becomes normal and symptoms are relieved.

The power of a muscle depends not alone on its own physical properties, such as size, nutrition, place of attachment, etc., but also on the strength of the nervous stimulus which excites its action. This is analogous to other sensations. The pianist makes his fingers educate his brain, that the brain may do better work with the fingers. Tasks consciously performed are in time relegated to subconscious control. Dr. Jackson says: "orthoptic exercises are for nerve training—all forms of orthoptic apparatus depend for their usefulness upon a fusion sense, but whether this sense is strong or feeble, real exercise is possible only by getting the patient to make the effort."

The two essentials for muscle training are perseverance and concentration. It is better to allow no third person in the room, not even the assistant or secretary. It makes a difference whether we knock at a door softly or loudly, and sometimes have to knock repeatedly before it opens. It is so with the brain. Exercises may seem to have no effect for some time, and then suddenly succeed, the effect being cumulative, each one, though apparently disappointing, contributing to the final end. In all exercises of this sort there is a psychic factor which should be utilized.

It is best to delay giving home treatments until the patient has a sufficient number of office treatments to understand the desired end. When progress is shown at the office, the patient grasped the idea of what is required, and is then better able to accomplish what the home treatments are designed to do, that is, aid the refractionist in restoring ocular comfort. For home treatment an ordinary Holmes stereoscope is used with a set of charts. Definite lessons are given for home treatment. He should use the eyes, not rest them, and disregard discomfort; when the eyes feel especially uncomfortable they should be used.

In a large majority of exophoria cases fusion exercises will give relief of symptoms. With perhaps one-half of one's successful exophoria cases orthophoria will be secured, with the other half the heterophoria will be reduced, but the patient will have secured such a super-abundance

of amplitude that he is able to overcome the wrong tendencies automatically without discomfort.

Stereoscopic exercises have been found to be of considerable value in esophoria. In a majority of cases, excessive convergence is due to the inability of the patient to hold the innervations within bounds. The response to the innervation to converge is excessive with inability on the part of the patient to hold it in check. The stereoscope with the aid of fusion tends to stabilize and to restrict excessive action. The results in esophoria, however, are not as good as in exophoria.

Profession puts too many glasses on people, especially children and young people which could be eliminated with fusion exercises and sometimes a stimulant to the accommodation as pilocarpine. Also too many glasses are changed.

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#### TISSUE SUBSTRATE MICROCULTURE FOR TUBERCLE BACILLI

H. J. Corper, Denver (Journal A. M. A., Oct. 15, 1932), gives a simple culture method for growing small numbers of tubercle bacilli from suspected specimens that are negative on microscopic examination of smears. The method designated the "tissue substrate micromethod for culturing tubercle bacilli" is based on the fact that from 1 to 2 volumes of 6 per cent sulphuric acid will destroy undesirable contaminators and saprophytic acid-test bacilli within from one-half to one hour at 37 C., and that blood or egg yolk, after the sulphuric acid treatment, neutralized with an isotonic solution (1.3 per cent) of sodium bicarbonate containing 3 per cent glycerin, is a good nutrient medium for supporting the growth of small numbers of human tubercle bacilli at 37 C. In control laboratory tests and in routine empiric tests with sputums negative on microscopic examinations of smears, the simple tissue substrate microculture has revealed a high percentage of positive results for tubercle bacilli, which recommends the test for this purpose in practice.

#### FUNDAMENTALS OF ELECTROCARDIOGRAPHIC INTERPRETATION

In this continuation of his discussion of the fundamentals of electrocardiographic interpretations, J. Bailey Carter, Chicago (Journal A. M. A., Oct. 15, 1932), considers auricular extrasystoles, A-V nodal extrasystoles, auricular flutter, auricular fibrillation, ventricular fibrillation, heart block, and partial heart block.

#### INFECTIOUS MONONEUCLEOSIS

C. M. FULLENWIDER, M.D.  
MUSKOGEE

On July first last year, Dr. H. A. Scott asked me to see a patient, C. B., a young man 18 years old. For a week he had been feeling bad. He had a slight sore throat, headache and increased temperature. At the time I saw him the evening temperature was 104. His body showed a few red spots, suggestive of rose spots. The cervical and inguinal glands were moderately enlarged. The spleen was not palpable. The tonsils had been removed some time before. The adenoid tissue on the pharyngeal wall was red but not markedly inflamed. Blood examination showed a white count of 3900 with 45% lymphocytes, 43% polys, and 12% monocytes. Widal and examination for malarial parasite negative.

Two days later the throat became so sore that swallowing was very difficult. The epiglottis was swollen and red. The interior of the larynx could not be seen. The temperature was still high. White count 8900, polys 52%, lymphocytes 43%. In the fifth the white count was 23,300, polys 28%, lymphocytes 63%. On the sixth, white count 21,000; polys 22%, lymphocytes 74%. The temperature was still high and the soreness of the throat very marked. By the eleventh the total white count had dropped to 16,900, polys 12%, lymphocytes 82%, large mononuclears 6. The temperature began to drop and the patient felt better. The swelling of the epiglottis became less but the lingual tonsil was greatly enlarged. From this time on the soreness decreased steadily and the temperature seldom went above 99. The epiglottis remained thick for a considerable time. A white count on July 17, gave a total of 10,800, polys 9, lymphocytes 88 monocytes 3. The patient was feeling well and was discharged on the twentieth. Soon after this he left for the North so that I do not know how long he retained the abnormal leucocyte count.

We diagnosed this case as infectious mononeucleosis. The literature of this disease is not very extensive. Pffiffer in 1899 described a disease which he called glandular fever, which is probably this disease though he did not give the blood findings. In the last few years, a number of papers have appeared and though the condition has been described under a num-



ber of names, infectious mononeucleosis seems to be the name most generally used. The disease begins with malaise, headache, sometimes a chill, fever and sore throat. The fever may be high. The angina varies from a slight redness to a severe inflammation, sometimes with slight ulceration. In a few days cervical and inguinal lymph glands and sometimes the spleen, are enlarged. The glandular enlargement may be very marked and the glands may appear to be about to suppurate. Suppuration however rarely occurs. The characteristic feature of the disease, is the white cell count. The red cell count and haemoglobin are usually normal. The white cells may number from ten or fifteen thousand up to twenty-five or thirty thousand. In the case reported above, the first white cell count was low—only 3,900. The striking thing is the increase of the mononuclear cells and the relative and actual decrease of the polymorphonuclears. The lymphocytes may reach a percentage of eighty-five or ninety. Most of these cells are of the small lymphocyte type though cases have been reported in which the large mononuclears were the predominating cell. Occasionally immature forms are seen though as a rule only normal forms are found.

The fever persists for from ten days to three weeks. As it falls the patient feels better and his symptoms clear up but some of the glandular enlargement and the lymphocytosis, persist for a long time. The patients suffering from this disease practically always recover. The etiology is unknown. It occurs at times in epidemics in which a large proportion of those exposed contract the disease but no specific organism has been discovered. Inoculation experiments with the various bacteria isolated from the throat and with ground up lymph gland, have failed to transmit the disease to animals. Nothing is known of the pathology beyond the fact that excised lymphnodes show a marked increase in the lymphatic tissue and evidence of increased activity in the germinal centers and lymphoids.

In the epidemic form where there are numerous cases and the physician is on the lookout for them, the diagnosis may be easy. In the sporadic cases the diagnosis is usually not made until the characteristic blood changes develop. It must be differentiated from a number of other diseases in which an increase of lymphocytes occur. Acute lymphatic leukaemia

shows a similar lymphocytosis but there are numerous immature forms whereas in infectious mononeucleosis, the cells are mostly of the adult type with comparatively few immature forms. In leukaemia, there is a marked anemia and a marked reduction in the platelets. The pallor prostration and fatal outcome of leukaemia are in marked contrast to the favorable outlook in mononeucleosis.

In agranulocytic angina, there is a great reduction in the total number of leukocytes and the angina is usually of a severe ulcerative type. Whooping cough and measles produce a lymphocytosis but their characteristic clinical features easily clear up the diagnosis.

The laryngologist is the first to see many of these cases because of the angina. Many of them are probably missed because no blood count is made. I feel sure that one of my own cases of apparent peritonsillar abscess falls in this class. This case had the typical faucial swelling and fluctuation and marked enlargement of the cervical glands. Repeated incisions failed to discover pus. No laboratory examination of the blood was made on account of financial reasons. The swelling finally disappeared, the soreness cleared up and the patient returned to normal. I cannot of course be certain that I was dealing with a case of infectious mononeucleosis, but I am certain that another such case in my hands will have a white cell count.

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#### TREATMENT OF MALIGNANT TUMORS: ADVANTAGES OF WEAK HEAVILY FILTERED RADIUM NEEDLES

Charles L. Martin, Dallas, Texas (Journal A. M. A., November 5, 1932), believes that modern developments in radium therapy are based on two facts: first, that radiation of great penetrating power and short wave-length has less necrotizing effect and a greater selectivity for radio-sensitive cells than radiation of low penetration and long wave-length, and, second, that the selectivity of radiant energy for radiosensitive cells is increased when the duration of the exposure is increased with a corresponding decrease in intensity. The implantation of multiple heavily filtered radium needles of low strength over long periods of time increases the margin of safety for normal tissue and causes the rapid regression of malignant tumors of a relatively high grade of radioresistance without sloughing.

## FRACTURES OF THE TIBIA

C. R. ROUNTREE, M.D.  
OKLAHOMA CITY

The tibia may be fractured at any point either with or without an accompanying fracture in the fibula. The fracture may be either transverse, oblique or comminuted, simple or compound. Fractures involving the knee or ankle joints present special problems and will not be discussed in detail here.

One should always strive to obtain as perfect anatomical reduction as possible, but the ultimate object is the restoration of the leg to as nearly normal functional capacity as possible. The type of fracture, the condition of the soft parts and the economic status of the patient should be carefully considered. Unnecessary or questionable procedures should not be employed merely for the sake of beautiful X-ray films.

Repeated, ill-advised manipulations are traumatizing and disturb the formation of callus. In some instances when practiced to excess it becomes a definite factor in the development of delayed or non-union. However, excellent reduction, other things being equal, goes hand in hand with normal function.

When a fracture of the fibula occurs in conjunction with one of the tibia we do not try to secure accurate reduction. Since the bone is not concerned in weight bearing, the position of the fragments matters little as long as the tibia is reduced. When this has been accomplished the fibula will properly align itself.

The public is demanding from us better results in fractures. This is due largely to their familiarity with roentgenograms and also to the higher standard of acceptable results in fracture work.

With these generalities as a basis to work upon we now come to the discussion of treatment. Treatment varies as to the type and location of the fracture. In those cases where the fracture is transverse, the ends of the fragments have notches and irregularities suitable for locking; these are especially favorable for reduction by manipulation, and when once thoroughly locked there is little likelihood of slipping. It is not so important that the fragments be in one hundred per cent apposition as it is that they be definitely engaged and locked and that the normal length be restored.

The alignment of the extremity is of equal importance and should be correct. It is surprising the number of poor results which are directly caused by poor alignment. In the normal extremity a line from the anterior superior spine of the ilium bisects the patella and when continued downward should pass between the first and second toes. There should be no posterior bowing of the fragments. A slight amount of anterior bowing will not materially affect function, but if the alignment varies more than a few degrees from normal in either direction, pain and disability may ensue from abnormal stress and strain on the knee and ankle joints. In addition, there is a visible deformity which is conspicuous to the patient and his friends.

In the short oblique fractures there is usually a projecting spur on one fragment which can be locked into the opposite one. In the long spiral oblique type with considerable displacement it is usually impossible to affect a satisfactory reduction by manipulation which will hold. For these, skeletal traction by means of a pin or Kirschner wire through the os calcis with fixation on a Boehler<sup>1</sup> or Braun frame is the treatment of choice. After the fragments have been pulled down to the proper position and alignment, traction is maintained until sufficient callus has formed to prevent slipping. A method of introducing steel pins through the skin into the fragments and incorporating them into a plaster cast after the fracture has been reduced has been described by Orr<sup>2</sup> and appears to be very efficient.

Badly comminuted fractures frequently require traction in order to overcome the shortening and deformity and to maintain correction until sufficient callus forms, after which time a cast may be applied. If it is complicated by being compound, the problem is still more difficult. Loose fragments should not be removed unless they are completely detached. As long as any attachment remains they should be allowed to remain in place even in the face of extensive laceration of the soft structures. Many of these pieces will live and become incorporated in callus and even those which are not viable serve as a scaffold around which new bone is formed, unless they become so badly infected as to be extruded as sequestrae. The unwise removal of pieces of bone in a compound comminuted fracture frequently leads to serious loss of length, loss of continuity,



or the development of a wide gap between the ends of the bone which is very difficult and sometimes impossible to bridge across.

In passing, we should like to stress the value of prompt reduction and thorough, immediate immobilization as preventive measures against infection. We are also opposed to the introduction of metal plates and bands in compound fractures. The danger of stirring up infection greatly outweighs any other value they may have. We do not share the opinion expressed by some men that these cases should have an immediate operation. On the contrary, our experience has been just the opposite. The vast majority will not become infected if they are treated as simple fractures and foreign materials, instruments, probes, etc., are kept out of the wound.

A word should be said in regard to the length of time required for union to occur. There seems to be an impression that one may expect union in six to eight weeks. In the average case from three to four months' time is more often necessary before union is sufficiently strong to enable the patient to bear weight without some form of support. When a condition of delayed union exists, from six months to a year may be required before healing occurs. Experience shows that permanent joint damage following prolonged immobilization is the exception rather than the rule. Even in elderly individuals this is true, and in children and young adults joint changes are rarely seen unless they are the seat of a definite injury.

In conclusion it may be said that treatment should begin as soon after the fracture has been sustained as possible, and ends when union is secured and restoration of function is established. If the condition of the patient permits, reduction should be attempted at once for the following reasons: First, after the extremity becomes swollen from hemorrhage and edema, manipulative efforts are greatly interfered with and the chances of securing a good reduction are materially lessened. The proximity of the bone to the surface renders it adaptable to manipulative procedures and every advantage should be taken of this fact so that one can effect reduction while the fragments are easily palpable and muscle spasm is at a minimum. Second, the quicker the reduction and fixation the less the reac-

tion in the soft tissues and the more rapid the healing.

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DISCUSSION: *Dr. John E. McDonald*, Tulsa.

I think a very essential point in the treatment of this particular type of fractures is early reduction and immobilization, which are the most important things in the treatment of fracture. I have seldom delayed even in compound fractures the immediate reduction of that fracture, getting as good a position as possible. By that we are able to reduce the shock and give nature an excellent opportunity to repair the fracture. I find that if these fractures are properly immobilized, that a large percentage of delayed unions can be prevented.

One thing that ought not to be overlooked and which we used to overlook, is the position in alignment, the position the foot is placed in at the time immobilization is begun. So often we see a foot that has not been sufficiently flexed. A compound fracture requires a longer time than simple fracture, twenty to fifty per cent. That is a point worthwhile to remember. Where there is a large amount of trauma, not infrequently a large hematoma is the real cause of the long or prolonged or delayed treatment. If it is operable, a simple evacuation of the pocket will hasten considerably the treatment and decrease the amount of disability.

*Dr. Rountree:*

I feel the same way as Dr. Martin, that particularly in compound fractures union is often delayed. We should not be in a hurry to operate these cases. We can put on a weight-bearing cast and let them walk around.

#### CONGENITAL ELEVATION OF SCAPULA AND PARALYSIS OF SERRATUS MAGNUS MUSCLE

Armitage Whitman, New York (Journal A. M. A., Oct. 15, 1932), describes an operation for the relief of congenital elevation of the scapula and for paralysis of the serratus magnus muscle. One case of each condition is reported. A hitherto unreported complication of the operative treatment of Sprengel's deformity is described. The operation is illustrated by diagrams, and the preoperative and postoperative condition of the patients is shown in motion pictures.

## FRACTURES OF THE FEMUR WITH SPECIAL REFERENCE TO THE NECK

H. A. SCOTT, M.D.  
MUSKOGEE

Your attention is respectfully invited to a brief study of fractures of the femur, with special attention to the neck.

*Anatomy of*—The femur is the longest, largest and strongest bone in the body. In the erect posture, it is not vertical, being separated from its fellow above by a considerable interval, which corresponds to the entire breadth of the pelvis, but inclining gradually downward and inward, so as to approach its fellow towards its lower part, for the purpose of bringing the knee joint near the line of gravity of the body. The degrees of this inclination varies in different persons, and is greater in females than in males, on account of the greater breadth of the pelvis. For convenience of study, the femur is divided into a shaft, and two extremities.

*Upper Extremity*—The upper extremity presents for examination a head, a neck, and a great and lesser trochanter.

The head of the femur, which is globular, and forms rather more than a hemisphere, is directed upward, inward, and a little forward, the greater part of its convexity being above and in front. Its surface is smooth coated, with cartilage in the recent state, except at a little behind and below its center, where there is an ovoid depression, for the attachment of the legamentum teres.

*The Neck*—The neck of the femur is a flattened pyramidal process of bone which connects the head with the shaft of the bone. It varies in length and obliquity in various periods of life and under different circumstances. The angle is widest in infancy, and becomes lessened during growth. In the adult, it forms an angle of about 130 degrees with the shaft, but varies in inverse proportions to the development of the pelvis and the stature. The angle is greater in men than in women. It has been stated that the angle diminishes in old age. The neck is flattened from before backward, contracted in the middle, and broader at its outer extremity, where it is connected with the shaft, than at its summit, where it is attached to the head. The vertical diameter of the outer half is increased by the thickening of the lower edge, which slope downward to join the

shaft at the lesser trochanter, so that the outer half of the neck is flattened from before backward, and its vertical diameter measures one-third more than the antero-posterior. The inner half is smaller and of a more circular shape.

*The Anterior Surface* of the neck is perforated by numerous vascular foramina. The posterior surface is smooth, and is broader and more concave than the anterior; it gives attachment to the posterior part of the capsular ligament of the hip-joint, half an inch above the posterior intertrochanteric line. The superior border is short and thick, and terminates externally at the great trochanter; its surface is perforated by large foramina. The inferior border, long and narrow, curves a little backward, to terminate at the lesser trochanter.

The trochanters are prominent processes of bone which afford leverage to the muscle which rotates the thigh on its axis. There are two in number. The shaft of the femur is almost cylindrical in form. It being a little broader above than in the center, and somewhat flattened below. It has three borders and three surfaces.

*Lower Extremity*—It is larger than the upper, is of cuboid form, flattened from before backwards, and divided into two large condyles or "knuckles" by an interval which presents a smooth depression in front called the trochlea, and a notch of considerable size behind the intercondylloid notch.

*Articulation* — Os-innominatum, tibia, and patella.

The femur is developed by five centers, one for the shaft, one for each extremity and one for each trochanter. The femur affords attachment for twenty-three muscles. These muscles with the aid of traction serve as splints, so to speak, in treating fractures of the shaft of the femur.

*Etiology*—Fractures of the neck of the femur have always been a subject of exceptional interest because of its common occurrence in elderly persons, its slowness in healing and the difficulties encountered in its treatment. While primarily an injury of old age, it should not be forgotten that it may occur at any age, even in children. Modern transportation and mechanical work of all kinds have revolutionized fractures, not only for the neck of the femur, but of the entire bony anatomy.



In "Wilson and Cochran," one will find the following statement: "In a group of 526 cases of fracture of the femur reported by Speed in 1921, 124, or 24%, were fractures of the neck; while 118 or 22%, were fractures of the base of the neck in the intertrochanteric region. Of these, 96% occurred in persons beyond the age of 50, and 60% of the patients were women."

*Causation*—In old persons, the injury is generally due to a slight trauma, a misstep, a stumble or fall upon the hip. It has been said that the fracture precedes the fall. The length of the bone, its muscular attachment, the angle of the neck with the shaft, bony changes in old age, and the possibility of hypertrophic arthritis, etc., are causative factors. In the robust adult, it is caused by great violence directly to the trochanter and lateral aspect of the thigh; and fall of great height upon the feet. In children, it is due to fall with hyper-extension of the thigh.

*Healing*—In the past, healing was thought to be a rare thing in this sort of fracture. Sir Astley Cooper once stated that it never occurred, but later changed his mind. In the recent past, it has been recognized that fractures of the base of the neck unite readily while those nearest the head do so with difficulty. It has been recognized that very commonly the portion of the neck attached to the proximal end becomes absorbed. For this reason and others, one is justified in believing that failure of union is chiefly due to three factors:

1. Insufficient blood supply and senile changes in the bone.
2. Presence of synovial fluid which bathes the fractured surface.
3. Incomplete approximation of the fragments.

*Blood Supply*—The main blood supply to the head and neck is through the capsule. A small amount may be through the ligamentum teres in early life.

*Synovial Fluid*—Just why and how this fluid acts in the fractured parts is not known. However, it has been known for a long time that it does prevent union.

*Complete Approximation*—This is an important factor. It gives back the normal position of the bone, and gives nature a better opportunity to re-establish the nor-

mal blood supply, which is the most important thing in obtaining union.

*Types of Fractures*—In the recent past, they were termed intra—or extra capsular fracture. This distinction has lost its force. True impaction may be encountered, but is not common.

*Diagnosis*—History of injury, severe pain, deformity, the leg is adducted and externally rotated. Usually it is found with the outer border lying flat on the bed. All motions of the hip are very free. The great trochanter is displaced upward on the ilium and rotated outward. Shortening of the shaft is in proportion to the amount of displacement. It is important to note, however, that in the type of fracture with a small amount or no displacement, the diagnosis is difficult, in that one finds resistance to motion and little or no deformity. The use of the X-ray by an expert is the key to a correct diagnosis.

*Treatment*—Treatment should be considered from two standpoints. That of saving life, and that of ultimately restoring function to the hip. The most enthusiastic method of treating these cases at present is reduction under general anesthetic and fixation by the application of a plaster cast. "Spiker of the hip, so to speak," extending from the toes well above the margin of the ribs. This is fine in the robust adult, but in elderly persons the Thomas or Brown's modified Hodgens' splints, to my mind, is the method of choice. Especially the Hodgens', and in passing I will briefly describe the Hodgens' splint. Any blacksmith or tinsmith can make the splint in a very few minutes, if given the dimensions. The material is three by sixteen, brass or iron, or number four wire, all in one piece. The distal extremity is six inches wide and the proximal, eight, the ends of the latter being connected by an arch of such height as to pass well over the thigh. The length over all is thirty-six inches. On the upper side of the frame four loops of smaller wire are placed, those nearer the proximal extremity being nine inches from the end, while those toward the distal extremity are ten inches from its respective end. These loops are for supporting of cords, or straps. Twelve inches from the proximal end of the splint is bent at an angle of about 170 degrees. This angle will allow the limb to assume a position which gives most comfort, viz: that of partial flexion. To the supporting loop are attached adjustable straps with buckles, or

small cord equipped with tent blocks, and are passed through a ring about fourteen inches above the frame. The latter is attached to a rope or sash cord, swung from the ceiling, or some convenient support.

The Hodgens' splint properly applied, tends to reduce the fracture, relieve the pain, permits the patient to sit up in bed, or even in a chair, free motion to the spine, free use of both hands, and the other leg. This unlimited motion will probably afford enough exercise to adequately assist nature to prevent the numerous complications which may arise, such as bed-sores, sloughing, and especially the dreaded hypostatic pneumonia which is, I think, the cause of deaths in most of the fatal cases of fracture of the neck of the femur.

*In Treating Fractures of the Shaft*, perfect reduction is not near so important. Fair approximation with sufficient traction or extension, one may expect a good result. This is due largely to the abundant blood supply of the shaft. While in the neck, as has been stated, the blood supply is solely from the capsule, and if reduction is not perfected it would be impossible for nature to re-establish the normal blood supply which is necessary to an ultimate recovery.

#### SUMMARY

1. Perfect reduction.
2. Immobilize as near as possible.
3. Re-establish the normal blood supply.
4. Promote nutrition and other normal functions of the body.

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#### BACTERIOPHAGE AS THERAPEUTIC AGENT IN STAPHYLOCOCCUS BACTEREMIA

W. J. MacNeal and Frances C. Frisbee, New York (Journal A. M. A., Oct. 1, 1932), have produced a staphylococcus bacteriophage which is highly potent against a large majority of bacteria of this species found in infections of the blood stream and have prepared this agent in a nearly protein-free medium. Use of this bacteriophage by external application, by subcutaneous injection and, above all, by intravenous injection in a series of fifteen patients with staphylococcus bacteremia was followed by death in eight and recovery in seven patients. The treatment is not a simple procedure, and the course of the disease leading to recovery is quite prolonged. The authors give brief clinical records pertaining to the fatal cases. In conclusion, they state that bacteriophage is a remedial agent which, when carefully and intelligently employed, may be expected to assist somewhat in the treatment of staphylococcus bacteremia, a disease that must still be regarded as extremely grave.

#### DISEASES OF THE THYROID GLAND AND TREATMENT\*

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MANGUM

In this discussion of the diseases of the thyroid, I have tried to keep in mind the viewpoint that only a clinical classification that can clearly be grasped by the general practitioner of medicine—and that can be utilized in arriving at a correct and early diagnosis should be considered, leaving the more technical morphological classification to the diagnostic acumen of the pathologist to whom the microscopic classification is more important.

Ever since we became interested in goiter work, we have pleaded for a simple and basically sound clinical classification upon which every clinician, regardless whether he be in general practice or devoting his major efforts to some specialty, can firmly place his diagnostic feet, and, with confidence in his own medical ability clasp hands with his confreres with a feeling of assurance that he is not groping in a miasma of uncertainty.

It has been my belief for some time that the apparent negligence of the general practitioner in recognizing goiter in its early or more intractable stages has been due to the many and different biologic classifications set up by divers authorities who intentionally or inadvertently place around their classification so much minutia of technical description that the average doctor has thrown up his hands in clinical despair, and shied away as quickly as possible, from the conscientious study of goiter. When one stops and reflects upon the amount of highly technical literature pertaining to goiter, that has been written in the past twenty-five years, is there any wonder that the man in general practice has been deterred from giving as much attention to the diagnosis and treatment of goiter as he would like to have done?

However, in recent years the clinical classification of goiter has fallen into more practical and competent hands, namely, the general surgeons, who are more interested in early diagnosis and clinical cures than in highly technical, hair-splitting differentiation.

Now with my object and viewpoint

\*Read before Southern Oklahoma Medical Society, June, 1932; Western Oklahoma Medical Society, July 19, 1932; The Four County Medical Society of Texas, September 16, 1932.



made clear, I will go briefly into discussion of the disease of the thyroid gland and treatment thereof.

### ETIOLOGY

If there is a specificity of cause for goiter, it is not known. However, there are certain conditions and circumstances that are so concomitant with goiter that we are compelled to give them recognition and consideration. It is well known that residence in certain regions of both this country and Europe is conducive to goiter. In these regions, like the poor, the goiterous patient is always present, and we speak of these localities as "goiter regions." This fact alone has been an incentive to study its causation. The knowledge that goiter does exist endemically in certain regions gave us our first frail anchorage to begin research in its etiology. Some authorities, particularly Bircher of Berlin, have thought that soil containing decomposed fauna and flora furnished the exciting toxin. At one time it was thought that goiters were more numerous in mountainous districts than in valleys and plains, but now we know we have endemic goiters in certain regions of this country, at least, far removed from mountain ranges. Water from limestone bearing strata has long been associated with endemic goiter, but endemic goiter exists where there is no known limestone or lime bearing rocks, but it is known that when the water supply of goiterous regions is changed to a pure or different type, the incidence of goiter is decreased to an appreciable and in many cases a remarkable extent. Hertzler<sup>1</sup> quoting Bircher cites one town in which in 1885 fifty-eight (59) per cent of the population were afflicted with goiter. The water supply was then changed to another source and in 1907 the population was only two and one-half (2½) per cent goiterous. It has not been established whether the suspected water contains a deleterious substance or lacked something essential for the proper functioning of the thyroid.

It is now well known that goiter in children is a deficiency disease and that the addition of iodine to drinking water

prevents its occurrence. Therefore one may correctly surmise that goiter in children, at least, is a compensatory hypertrophy, produced by the gland's efforts to supply the deficient iodine.

Again according to Hertzler<sup>1</sup>, in early adolescent goiter no hypertrophy of the gland is demonstrable, also that those who drink rain water while living in a goiterous region did not develop goiter. This fact may be confusing as to the causative agent, but nevertheless, chemical analysis has proved that goiterous thyroid glands contain less iodine than normal ones. The United States Department of Agriculture has demonstrated that in certain regions where myxedematous pigs are born, that if food from non-goiterous districts is fed to the sows, normal pigs are born. This indicates a food deficiency. If iodine is fed to pregnant sows, normal pigs are born. While iodine deficiency may account for the development of certain types of goiter, it does not explain why a certain per cent will become toxic and degenerate.

Certain types of infections have been blamed as the causative agent of goiter, and in certain cases this theory seems very poignant, but it fails to explain the age incidence in occurrences in the same family in goiterous districts and also why the goiter fails to develop if the child removes to a non-goiterous district before reaching this age. However, in adult cases of goiter, there is often an associated disease of some of the other organs and it is not at all untenable to suppose that these concomitant diseases do influence the course of the thyroid disease.

### CLASSIFICATION AND SYMPTOMATOLOGY

Before discussing the symptoms of thyroid disease, it seems expedient at this point to give you a working classification of thyroid disease. The classification that I give is the one that has been devised and is being used in the Border-McGregor Clinic in Mangum, and one which we believe to be very practical, simple and clinically correct. It is as follows:

Thyroid Disease	$\left\{ \begin{array}{l} 1. \text{ With goiter (enlargement)} \\ 2. \text{ Without goiter (enlargement)} \end{array} \right\}$	$\left\{ \begin{array}{l} a. \text{ Toxic} \\ b. \text{ Non-toxic} \end{array} \right\}$	$\left\{ \begin{array}{l} a. \text{ Colloid} \\ b. \text{ Adenomatous} \end{array} \right\}$	$\left. \begin{array}{l} \\ \end{array} \right\} 2$
		$\left\{ \begin{array}{l} a. \text{ Hyperthyroidism (toxic)} \\ b. \text{ Hypothyroidism} \end{array} \right\}$		

With the above classification it is obvious that in examining a suspected thyroid case, we look for the presence or absence of enlargement. In the presence of thyroid disease with enlargement absent, we either have a hyperthyroidism (toxic) or a hypothyroidism. If an enlargement of the gland is present (goiter) we have either a toxic goiter or a non-toxic goiter. If non-toxic, it is either colloid or adenomatous. From a clinical viewpoint this is all that is necessary.

Now as to the symptoms *per se*. If goiter (enlargement) is present, to advise us immediately that the gland is diseased, we have only to check the usual symptoms that accompany toxic goiter to ascertain its true clinical status. On the other hand, where the enlargement is undiscernible, or only slightly so, the chance of failing to diagnose thyroid disease, except in experienced hands, is very great, and here is where our diagnostic acumen and powers of correct observation meet the severest test. However, if one will familiarize himself with the ever present triad of symptoms of toxic goiter, he will be surprised at the corrected diagnoses he makes in the acutely ill patient that has "shopped" from one doctor's office to another without obtaining relief. This ever present triad of symptoms are exophthalmos, tremor and tachycardia, although in some cases the exophthalmos is so slight as to be often overlooked. Of course if discernible enlargement is also present, you have four cardinal symptoms that are infallible. In addition to this we may have the eye signs, if present, that are also pathognomonic if supported by any of the cardinal symptoms, viz: Von Graefe's (lagging of the upper lid), Stellwag's (lessening of winking), Dalrymple's (widening of the palpebral fissure) or disturbance of convergence.

These symptoms, when considered with a history of easy fatigue, exhaustion, excitability, and nervousness, should make the diagnosis comparatively easy. There are others, more or less constant symptoms, that are of value when correlated with any one of the cardinal ones, but time does not permit going into detail here.

Just a word here as to the symptoms of the hypothyroid case that is less frequently overlooked. However, we see a few such cases yearly. The symptoms being more or less constant and the diagnosis comparatively easy. These patients are apathetic, dull, and listless. They complain of

dull frontal headache and chilliness. They are pale and pasty looking, with an apparent edema of the tissues. The face looks swollen and the eyes puffy. The skin is dry and scaly. The hair is dry and often falling out. There is no perspiration. The hands and fingers become pudgy and the feet may swell but do not pit on pressure. The heart rate is slow and the blood pressure low. The metabolic rate is always minus, usually twenty (20) to forty (40). The treatment is thyroid extract.

#### TREATMENT

As to the treatment of the other forms of thyroid disease, I can give nothing better than quoting from a paper by my associate, Dr. Fowler Border, which was published in the February, 1931, issue of the Oklahoma State Medical Journal. "All goiter (enlarged) types of thyroid disease are potentially surgical, but the time of operating and the preliminary treatment to such a step, depends entirely, of course, upon whether the goiter (enlarged) type gland, is toxic or non-toxic. The second type of thyroid disease cases, i. e., thyroid disease without goiter (enlargement) is either specifically surgical (hyperthyroidism) or specifically medical (hypothyroidism). This then, is the sum total of all we may need to know for the purpose of scientifically classifying and treating thyroid disease."

1. Hertzler—Diseases of the Thyroid Gland.
2. Further Microscopic Different.

—o—

#### VAGINAL ENTEROCELE: REPORT OF THREE CASES

According to W. H. Bueermann, Portland, Ore. (Journal A. M. A., Oct. 1, 1932), vaginal hernias are rare. The posterior variety are more frequently encountered. The symptoms are largely those of rectocele or cystocele and are not characteristic. Diagnosis is often not made before operation, and repeated unsuccessful operations may reveal the true nature of the diagnosis. The association of enterocele and rectocele must be considered in diagnosis. Congenital weakness of the pelvic floor and the strain superimposed by pregnancy and delivery are predisposing causes of an uncertain etiology. Vaginal hernia requires surgical treatment governed by the principles set down for the surgical treatment of hernias in general. Complicating pelvic conditions often prevent a standardized technic being observed.



## PYELITIS\*

HUGH J. EVANS, M.D.  
TULSA

Pyelitis is the term used for a pyogenic infection of the genito-urinary tract, the kidney proper, the pelvis of the kidney, the ureter or the bladder. This condition is marked by general rather than local symptoms.

It is not a new disease and was first described by Huttenbrenner in 1876. Since then there has been much discussion as to the etiology. It is not questioned that it is more common in girls than boys and in infancy than childhood. It is also granted that the most common organism is the *B. coli*. Other offenders are the staphylococcus, streptococcus, hemolyticus, pneumococcus, *B. proteus*, Friedlander's bacillus, *B. pyocyaneus*, and the gonococcus.

The routes by which the infection reaches the genito-urinary tract is still a debatable question but we feel that there are three possible sources:

1. Hemogenous route. — This seems most likely because of the association of pyelitis secondary to infection in some other part of the body. This is shown rather definitely by the seasonal maximal incidences, namely, one in February and March, and in August and September. These correspond with the periods of respiratory infection and intestinal disturbances. There seems to be a definite relationship between pyelitis during or following these two types of infection. Pyelitis may also be noted following any of the acute infections.

2. The infection may be transmitted from below. This is borne out by the fact that about 75 percent of infections occur in girl babies.

3. Infection may be spread by the lymphatics. An obstruction of any kind at any point in the urinary tract may or will predispose to infections.

We are not sure just where the pathology is in pyelitis but it is probably in the kidney proper. It is thought that the common lesion is a suppurative interstitial nephritis with secondary involvement of the parenchyma. Whether there is a preliminary capillary damage due to toxins or organisms originating in a focus elsewhere or to vascular stasis or to other causes, is

not known. Neither do we know whether it is due to a heightened virulence of the associated organism and a decrease of the patient's resistance, nor what role obstruction plays. The infecting organisms having gained a foothold in the interstitial tissues produce an inflammatory lesion with varying degrees of necrosis. The point at which this process is arrested determines the question of acute or chronic pyuria.

The symptoms are such that there are no specific indications of the disease. In a typical case of pyelitis during the first year, the child usually has a fever of 102 degrees or more, is pale and irritable and has a rather anxious expression. On the other hand the onset follows or is associated with some other infection, most commonly an upper respiratory infection.

In the older child symptoms pointing to involvement of the urinary tract may be absent. Occasionally one may see a child who complains of low abdominal pain with tenesmus or burning on urination or one who has a frequency or a nocturia.

It is obvious therefore that diagnosis of infection of the urinary tract based on symptoms is only presumptive. Unexplained fever and the finding of pus cells in the urine will give us the privilege of calling the condition pyelitis. As far as treatment is concerned there is nothing new. Probably the most important step in treatment is the flushing out of the genito-urinary tract with water. This was emphasized as early as 1876 by Huttenbrenner. All pyelitis cases should have at least a quart of water in the twenty-four hours. If vomiting develops fluids have to be given by stomach tube, proctoclysis, or even subcutaneously or intraperitoneally. The body must and has to have its fluid balance maintained.

Sodium citrate and sodium bicarbonate are of value in alkalinizing and should be given in large doses. That is, enough to render the urine alkaline. Often the alkaline treatment is insufficient and we resort to urinary antiseptics. Methenamine or urotropin has proved to be very effective if given with discretion. Helmholtz advises large doses over a period of three to four days and then leaving off the antiseptic. He uses ammonium chloride in large doses to render the urine acid for only in an acid urine is the formaldehyde generated. This is best accomplished in a urine with a concentration of P. H. 5.5 to

\*Read before the Oklahoma State Pediatric Society, May 24, 1932, at Tulsa.

5.0. In large doses of methenamine hematuria often appears. This is not due to a nephritis and will clear up rapidly upon resuming the alkalis and plenty of fluids.

The general nutrition of the patient must be watched and his reserve built up.

In way of treatment it may be of interest to mention the vaccine which some believe is of value. Cline uses a B. Coli bacteriophage filtrate and he has reported favorable results in a small series of cases. Grunow has used a vaccine on a few cases and reports fair results. He has discarded bladder irrigations which he used up to 1920. Ginsberg reports one cure by the use of pituitary extract. His theory is that it increases the tone and incidentally the drainage of the ureters and the bladder.

Some authorities state that all cases of pyuria in male infants are due to some congenital abnormality of the genito-urinary tract, which interferes with drainage. No matter what sex then if we do not get good results with our routine medical treatment in all cases of pyelitis, it is wise to feel that there is a true organic cause and submit the child to a complete urological examination. This includes cystoscopic, ureteral catheter, and the X-ray under the direction of a capable urologist.

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#### ENURESIS\*

C. F. PARAMORE, M.D.  
SHAWNEE

Enuresis, or bed wetting, is incontinence of urine or the involuntary discharge of urine, nocturnal, occurring at night and during sleep and, diurnal, during the day.

In this paper I intend to deal more particularly with the type of cases most often met with in practice, those due to habit or poor management, since these are the most amenable to treatment.

Children begin to form habits very early in life. In the first three or four days they will often learn to cry to be held. Bowel control may be established in two to six weeks, so that the infant will not soil its diaper. Urinary control may be established during the latter part of the first year but the majority of children are trained during their second year. If this is not accomplished during the third year, incontinence may be said to exist.

Enuresis may be due to malformations, organic disease, chemical or mechanical irritations, or to a continuance of the infantile involuntary, as opposed to the normal voluntary adult control.

Congenital malformations may range from vesico vaginal fistulas to complete extroversion of the bladder or to persistence of the urachus.

Organic disease may be of the brain or cord, or systemic disease, (such as anemia, malnutrition, or inherited neuresthenia), that affects the central nervous system.

Meningitis, idiocy, and brain tumor may be causative factors. It also occurs in myelitis, spina bifida and cord injuries.

Inherited neuresthenia causing enuresis is often associated with chorea, hysteria, and epilepsy.

Chemical or mechanical irritations producing enuresis may be ammonium urate or uric acid in the form of sand or small concretions in the urine, stone in the bladder, highly acid urine, and highly concentrated urine. Phymosis, accumulation of smegma, balanitis and narrow meatus may produce sufficient irritation to cause bed wetting. Pin worms, rectal fissures, or polypi may be causative factors.

When there is no definite condition that

\*Presented before Pediatric Section, Annual Meeting Oklahoma State Medical Association, May 24, 1932, at Tulsa.



produces irritation, continuance of the infantile involuntary bladder evacuation is due to imperfect training and allowing a neurotic habit to develop, rather than the establishment of cerebral mastery.

Enuresis occurs in all ages, up to puberty and is occasionally seen in adults. It affects both sexes equally.

Enuresis may occur day or night—the majority of the cases, however, are both diurnal and nocturnal.

The type of micturition depends upon the cause. Malformation causes dribbling as the urine is produced. In organic cases the action is purely reflex. Happening before the patient has time to reach the toilet, if he is conscious of the desire. Chemical and mechanical types occur only when there is irritation, and disappear when the cause is removed. The habit type soon becomes wholly or partially reflex, and is usually nocturnal and diurnal early in life but the patient frequently learns day control after the first few years.

The treatment of malformation cases is surgical repair; in organic disease of brain or cord the condition is usually hopeless. When urine is highly concentrated fluids should be pushed. When uric acid deposits are causative, alkaline should be given. Phimosis with retention of smegma should be relieved by circumcision. Vesical calculi should be removed. When there is a large quantity of urine, with low specific gravity, fluids should be restricted, especially after four o'clock in the afternoon.

In the treatment of enuresis due to habit, management is the most important factor. It is easier to prevent enuresis than it is to cure it. Bladder control, in the infant, is largely the result of habit and nocturnal continence can be promoted by proper management in early infancy. If the baby is aroused several times during the night, to have his diaper changed, he learns to awaken and wet his diaper. This, of course, will contribute to later enuresis. Nursing or bottle feeding, at night, should be restricted and stopped as early as possible. If the child goes to bed every night with a full bladder he is bound to empty it during the night.

In securing the proper management for the child, with enuresis, the first and most important thing is to secure the cooperation of the parents and the patient. Enuresis is only cured by persistent and continued effort on the part of both parent

and child, and that over a long period of time.

It must be borne in mind that we are striving to substitute willed urination for involuntary urination. Every willed evacuation of the bladder tends to break down the lower spinal reflex. The whole technique of this training depends on anticipating involuntary urination and substituting willed evacuation, gradually lengthening the interval between urinations, until control is acquired.

In treating cases of enuresis where, after careful examination, I feel the condition is largely the result of bad habit formation, I give the parent a sheet containing the following instructions:

1. Give the child no liquids after 4:00 P.M., except one-half glass of water with supper.

2. Do not let the child run about after 4:00 P. M. It is very important to keep the child quiet. Care should be taken to secure for the child a simple, natural life, free from excitement or over-taxing of the nervous system.

3. Have the child sleep alone and not on its back. The latter can be effected by putting a towel around him with the knot at the back. See that the windows are wide open.

4. Put the child to bed at 7.00 P. M., no later. Be sure the bladder is emptied by a willed evacuation before the child goes to bed.

5. Have the child eat just three meals a day. No feedings at all between meals.

6. Do not let the child eat any candy, cake, ice cream, soda pop or chocolate. Do not give jam, jellies, or syrup. No fruit between meals.

7. Do not let the child drink tea, coffee, cocoa, or meat broths.

8. Do not let the child have salty or highly seasoned foods, such as: pickles, mustard, catsup, or baked beans.

9. Use as little salt on foods as possible.

10. Do not let the child eat meat or egg for supper.

11. Take the child up at exactly 10:00 P. M., and 6:00 A. M., to be sure that he is thoroughly awakened and has a voluntary urination. These hours are varied to meet the needs of the individual child. First the parent should awaken the child

at three hour intervals, (using an alarm clock, if necessary) and a record kept of the times the bed is found wet. When the child will go three hours regularly at night, without voiding, the time is lengthened to three and one-half hours and finally to four hours. In a few weeks the child can usually be trained to hold his urine with only one voiding—at 10:00 P. M. In a few months this can be omitted. The number of cases that can be cured by such simple means is most surprising.

Two points are most important in this method of management.

1. The method must be pursued every night, without any interruption, as any variation sets the treatment back to the beginning.

2. The purpose of arousing the child is lost unless he is thoroughly awakened and the urination is willed.

Corporal punishment is useless and harmful. Rewards are sometimes more effective than other form of treatment. The inspiring of confidence, that the physician will effect a cure, is often the most effective method.

I have found that having the child keep a diary often is helpful. In the morning he takes his note book and writes, "I did not wet the bed last night," when he has had a "dry" night. At the next visit to the doctor the book is presented for his inspection. Perhaps a small prize, given when a certain number of successive "dry" nights have been attained, may furnish additional incentive.

Drugs are, at times, useful as accessories. Atropine is the most effective. For nocturnal incontinence give—1 drop of  $\frac{1}{4}$  grain to ounce solution at bed time. Increase the dose, one drop daily, until results are obtained or reaction to the drug is manifested, by flushing of face and dilatation of the pupils. Strychnine is sometimes advantageous, especially in the diurnal type, I have used these drugs combined in a convenient form of Nu-bar-bel, a Blue Line preparation.

I had one case that responded to minute doses of thyroid.

Intelligent systematic training is the most important measure for the relief of this annoying condition. Practically all cases are amenable to treatment and persistence will usually effect a complete cure.

## THE NEGLECTED FIELD OF VAGINO-PERITONEAL OPERATIONS\*

W. WAYNE BABCOCK, M.D.  
PHILADELPHIA, PA.

*Abstract.* Many operations now made through the anterior abdominal wall may be more safely performed through a vaginal incision. Certain of these operations may also be done with greater facility by this route. The posterior uterine cul de sac is but a few millimeters from the vagina, with tissue easily punctured or divided, giving the simplest and quickest access to the peritoneal cavity. Such access has the following advantages: (1) The pelvic perineum best resists infection, (2) The most dependent and safest drainage is obtained, (3) Serious secondary reaction or troublesome adhesion is rare, (4) A thick obese abdominal wall is no handicap, and a secondary infection or weakness of the anterior abdominal wall does not result. (5) A postoperative vaginal hernia is almost unknown. The disadvantages of the vaginal approach including the cramped, limited field, poor visibility, and rather difficult access may be overcome by proper position on the operating table, special instruments and illumination, rather rarely, by the division of the vaginal outlet, and especially by technical training and experience.

With the patient properly placed in the high Trendelenberg position and under adequate relaxation from an anesthetic, the loose intestinal coils leave the pelvis and through a vaginal incision the pelvic organs and lower abdominal organs may be inspected. The following procedures lend themselves to this route: Diagnostic exploration; an ectopic pregnancy, pus tubes, appendicitis, perforated rectum or uterus, peritoneal or pelvic tuberculosis or malignancy may thus be easily determined. Either an anterior or posterior colpotomy may be used. Through a posterior colpotomy, the pelvic cavity and peritoneum, the uterus, tubes, ovaries, ligaments, perimetrium, the rectum and pelvic colon, and in eighty per cent the vermiform appendix and cecum may be examined. An anterior colpotomy has special advantage in giving access to the posterior wall of the bladder, pelvic portion of the ureters, the round ligaments and the uter-

\*From the Surgical Department, Temple University, Philadelphia, Pa. Read at the Third Annual Fall Clinical Conference, Oklahoma City Clinical Society, November 2, 1932.



us and its appendages. Retroversion of the uterus may be corrected through a posterior colpotomy by shortening of the round or utero-sacral ligaments. Through an anterior colpotomy the round ligaments may be shortened, a Baldy Webster type of operation done, or a vaginal fixation of the uterus produced. While the high type of vaginal fixation or vaginal interposition interferes with pregnancy, the low form may be used during the child bearing age. For ectopic pregnancy the affected tube may be pulled through a posterior colpotomy incision and immediately clamped and ligated, arresting the hemorrhage in the simplest, safest manner.

*Salpingitis.* While an abdominal section is often dangerous and undesirable, in acute or subacute salpingitis, vaginal section done without undue manipulation is relatively safe and usually is followed by rapid convalescence. For a very acute infection, a posterior colpotomy and the simple introduction of a large iodoform gauze drain about the affected appendages is used. This is followed by prompt relief from pain and fever and short period of disability, usually twelve to fourteen days, and a reduced number of sequelae, and it should be selected over the non-operative forms of treatment when the symptoms are prolonged and severe.

In acute puerperal or postoperative salpingitis if there is a diffuse infection of the parametrium, peritoneum and blood stream, the condition is not amenable to operation. Whenever the condition is localized to the fallopian tubes, endometrium, uterus, or pelvic peritoneum, the cul de sac drainage is the safest and most satisfactory operative procedure. For subacute or chronic salpingitis with pus tubes, tubo-ovarian abscess, pelvic abscess, a vaginal drainage, vaginal salpingectomy, or vaginal hysterectomy has the lowest mortality and the least morbidity.

*Vaginal Ovariectomy.* Many cysts and tumors, even of large size, may be evacuated through a posterior colpotomy, withdrawn, and the pedicle ligated through the vagina. Adhesions may be brought into view, divided, and any bleeding controlled by ligature or suture. Selection of cysts for vaginal removal require judgment and an anterior or posterior colpotomy may be used. Dermoid cysts may be pulled down, gradually evacuated, delivered, and removed. Solid, benign, ovarian tumors up to the size of a grapefruit may be brought into the vagina and with or without morcellation, removed.

*Vaginal Myomectomy* is feasible even for relatively large fibroid tumors of the submucous, interstitial, or subserious variety. For the growths within the uterus it may be necessary to split the posterior or anterior uterine wall to gain access.

*Vaginal Hysterectomy* has a lower mortality and a shorter period of disability than any other method of removing the uterus. Fibroid tumors extending even above the level of the umbilicus may be removed by morcellation. The best results in the treatment of cancer of the uterus have been reported from vaginal hysterectomy followed by radium applications.

Vesico-vaginal and recto-vaginal fistulae may be more efficiently handled when the parts are well mobilized through an anterior or posterior colpotomy. We have encountered no fistulae which could not be closed by such a maneuver irrespective of previous failures. Very fine silver wire remains a most desirable material for suture.

The lower ureter is best exposed through an anterior colpotomy. Calculi may be removed, strictures divided or excised, fistulous openings turned into the bladder, or an anastomosis between the ureter and bladder made through such an incision.

*Appendectomy* may be performed through the vagina in about eighty per cent of patients. Low-lying appendiceal abscesses may be well drained through the vagina.

*Rectum.* Perforation of the rectum as well as of the uterus may be localized and occluded through a vaginal incision. Affected areas may thus be isolated, sutured or drained by gauze packing with the least danger of general peritoneal contamination. A ruptured bladder may likewise be sutured through an anterior colpotomy. In selected cases a vaginal ileostomy is feasible and effective for intestinal obstruction. When rectal cancer involves the posterior vaginal wall, this should be resected with the growth. The vaginal incision, as pointed out many years ago by Murphy, facilitates the extirpation of low-lying malignant tumors of the rectum.

*Sterilization* may easily be done through an anterior colpotomy, the fallopian tubes being resected, the cornu of the uterus excised, or other type of operation being used.

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### EDITORIAL

#### 1933 DUES NOW PAYABLE

This is to again call the attention of our  
membership to the fact that dues for 1933  
are payable during January, and the earl-  
ier in the month they are paid the better.  
We are receiving some dues directly from  
the members. These should be paid  
through the county secretary, then the rec-  
ords of his office and our office coincide,  
for he keeps, or is supposed to keep, a car-  
bon copy of every remittance so that there  
can be no misunderstanding as to who has  
or has not paid for the current year. As  
the dues in counties vary greatly we are

unable to say what amount to accept, so it  
is obvious that it is best to pay through  
your county secretary.

—O—

#### THE ANNUAL MEETING FOR 1933

This meeting will be held at Oklahoma  
City, headquarters and all features of it at  
the Skirvin Hotel, on May 15, 16, 17.

The first day will be devoted to the  
meeting of the Council, and House of Dele-  
gates. Possibly other organizations and  
features may also meet upon that day, but  
upon that we have not yet been advised.  
The plan now is that the two General Sec-  
tions, to which distinguished out of State  
men have been invited and accepted, and  
others, will make up the program for the  
mornings of the 16th and 17th, while the  
Sections will be heard on the afternoons of  
the 16th and 17th. It is to be understood  
that this arrangement, at this time, is  
tentative and subject to change.

The object in making this announce-  
ment now is to suggest that all those who  
desire to prepare papers for the Annual  
Session should at once take it up with the  
Section in which they think their paper  
properly belongs. These section officers  
will be found listed in the back of each  
Journal and the sooner they know who will  
make up their program, the earlier it may  
be published in the Journal.

—O—

#### GOITER—A PROBLEM FOR EVERY PHYSICIAN

Probably 90 per cent of the members of  
the Oklahoma State Medical Association  
are engaged more or less in general prac-  
tice, though some of them may particu-  
larize along certain lines. Aside from eye,  
ear, nose and throat men there are not  
many devoting themselves strictly to any  
one specialty and these are probably lim-  
ited to X-ray and radiology and its various  
phases, dermatology and urology and  
genito-urinary diseases. Of course there  
are some others who limit themselves to  
special lines or work, but the point is that  
the mass of our members are general prac-  
titioners. This statement is called atten-  
tion to on account of an article appearing  
in this issue, "Diseases of the Thyroid and  
Treatment," by Dr. Frank H. McGregor,  
Mangum. While we are not considered in  
the "goiter area," nevertheless in the ag-  
gregate there are many cases of goiter  
found each year scattered over the state



and it is regretable to say that these cases are often treated, not for their goiterous condition, but for any one of the many complex symptoms which may be more evident. The further point is that goiter is therefore a problem of all medical men and should be remembered upon the first examination of every patient unless the case is obviously some other thing, an injury, or acute infection.

The classification which Dr. McGregor has laid out is practicable, easily understood and brushes away a great deal of the confusion so often found in the writings of various men upon these subjects.

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### REPORT OF THE COMMITTEE ON COST OF MEDICAL CARE

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After reading various phases of the report and recalling the peculiar psychological makeup of the committee (we do not question their outstanding ability) one is inclined to be as much at sea as ever. The committee made both a majority and minority report, and until a further study convinces us otherwise we would be inclined to favor the minority report, formed principally by Dr. Olin West, Secretary of the American Medical Association; George E. Follansbee, Chairman of the Judicial Council; M. L. Harris, a former President of the American Medical Association and for many years a member of the Judicial Council; and Drs. A. C. Christie, Kirby S. Howlett, A. C. Morgan, Robert Wilson and N. B. Van Etten. It is also to be noted two members representing the dental profession filed a separate and minority report.

We agree with Dr. Lewellys F. Barker, Baltimore, that there is something wrong in a country where provision is not made for eighty per cent of the people whose incomes are insufficient to supply them with proper medical care during serious illness. But the majority report instantly brought severe criticism from a number of great, and supposedly well informed editorial writers, the New York Times, Washington Star, Boston Transcript, New York Herald Tribune, New Haven Register, being the leaders. Apparently all of these papers are under the impression that the majority report smacks too much of socialism, or possibly more than that—Sovietism—the latter being profoundly worse.

We think it well worth while for every

physician in Oklahoma to read a communication from Dr. A. E. Hertzler, which will be found in the December issue of the Journal of the American Medical Association, page 2202. We all know Dr. Hertzler to be a practical man, closely in touch with the very severe problems confronting the poor of the middle West. We agree thoroughly with his idea that too many great, tremendously subsidized hospitals have been built, probably where they are not needed, while the smaller hospital has been neglected. Incidentally we think there is room yet for many small hospitals, even if they have only a few beds, in many localities in Oklahoma. But to bring that about the physicians in those localities must get together, lay aside possible personal prejudices and offer to the people a type of treatment and hospitalization commensurate with the means of that particular locality.

At this time even the formerly fairly well to do find it impossible or difficult to pay a physician or surgeon a material sum of money, nevertheless the doctor, as a rule, will be found giving them every possible care. We are certainly confronted by a serious condition in this respect, however, we do not, under any circumstance, wish to have foisted upon the medical profession the panel system, such as has been enforced in England for many years. We hope never to see the day when that strong relationship between the patient and doctor will disappear by some fool experiment. We do think however that the doctor should be prepared to render his patient the best modern service obtainable.

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### CANCER INFORMATION

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The American Society for Control of Cancer has issued a number of booklets upon various phases of cancer which will be sent gratis to any county medical society. It is stated that 640 county medical societies in the middle south and southwest are using this program. The projector, films, ten sets of slides and the transilluminator will be furnished to our State Committee on Cancer Control and routed through the University Extension Department, Mr. L. W. Kibler, Director, Norman.

While the communication does not so state it is assumed that these will be furnished in the order in which they are requested.

### Editorial Notes—Personal and General

DR. E. MARGO, Oklahoma City, is reported ill with influenza.

DR. SHERWELL G. WEBER, Bartlesville, sustained a broken leg while hunting quail on the Weber farm, near Dewey.

DR. W. J. WHITAKER, Pryor, who has been confined to his home for the past two weeks with influenza, is reported improving.

DR. A. R. LEWIS, Oklahoma City, is suffering a fractured right hip and shoulder, received when he slipped and fell on the ice.

DR. J. S. FULTON, Atoka, attended a meeting of North Texas Medical Association in December. Dr. Fulton joined that Association when it included Indian Territory members 42 years ago.

POST GRADUATE MEDICAL STUDY, fostered by the State University Extension Department and the State Medical Association, reports attendance as follows: Oklahoma City 45; Okmulgee 19; Muskogee 47; Tulsa 83 and Ada 21.

PONTOTOC COUNTY MEDICAL SOCIETY elected the following officers for 1933 at their regular meeting in December: President, Dr. C. F. Needham; Vice-President, Dr. Ernest A. Canada, Ada; Secretary, Dr. Hervey A. Foerster, Ada.

HUGHES COUNTY MEDICAL SOCIETY elected the following officers for 1933, at their meeting held in December: President, Dr. W. L. Taylor, Holdenville; Vice-President, Dr. H. S. Hamilton, Dustin; Secretary, Dr. G. W. Diggs, Wetumka.

LeFLORE COUNTY MEDICAL SOCIETY met at Poteau, December 8th, and elected the following officers for 1933: President, Dr. G. R. Booth, LeFlore; Secretary-Treasurer, Dr. W. M. Duff, Spiro; Delegate to annual meeting, Dr. W. R. Shippey, Wister.

LINCOLN COUNTY MEDICAL SOCIETY elected the following officers for 1933 at a meeting in Chandler, in December: President, Dr. F. D. Brown, Sparks; Vice-President, Dr. John Cassidy, Chandler; re-elected Secretary, Dr. C. W. Robertson, Chandler.

TULSA COUNTY MEDICAL SOCIETY elected the following officers for 1933, at their December meeting; Dr. Charles H. Haralson, president; Dr. Victor Allen, vice-president; Dr. Carl F. Simpson, secretary-treasurer, re-elected; Dr. R. N. Smith, elected President for 1934. All of Tulsa.

MUSKOGEE COUNTY MEDICAL SOCIETY met with the Sebastian County Medical Society of Arkansas, at Muskogee, December 12th. A very interesting program was delivered by the Sebastian County members. This meeting will be duplicated in Ft. Smith, Arkansas, with Muskogee County Society as guests in 1933.

GARVIN COUNTY MEDICAL SOCIETY elected the following officers for 1933, at their meeting in December: President, Dr. Ray H. Lindsey;

Vice-President, Dr. W. P. Greening; Secretary-Treasurer, Dr. John R. Callaway, all of Pauls Valley; Dr. R. M. Alexander, Paoli, censor; Dr. N. H. Lindsey, delegate to the state convention, Pauls Valley.

BRYAN COUNTY MEDICAL SOCIETY elected the following officers for 1933, at their meeting in December: President, Dr. W. A. Houser, Durant; Vice-President, Dr. H. B. Fuston, Boko-chito; Secretary-Treasurer, Dr. J. T. Wharton, Durant; Censors, Dr. G. C. Price, Durant; Dr. Fuston, Dr. D. Armstrong, both of Durant; Delegates to annual session, Drs. J. L. Shuler and B. B. Cooker, Durant.

EXTENSION DIVISION OF THE UNIVERSITY OF OKLAHOMA gave a lecture course on Obstetrics and Gynecology in Muskogee, December 7, 1932. This course was also sponsored by the Oklahoma State Medical Association. The program consisted of Drs. Lewis Rudolph of Chicago; R. J. Crossen, St. Louis, and Dr. Reinberger, Memphis, Tenn. These men made an excellent team on these subjects and very practical lectures were enjoyed by all.

WOODS-ALFALFA COUNTY MEDICAL SOCIETY met at Cherokee, November 29th, and elected the following officers for 1933: President, Dr. D. B. Ensor, Hopeton; Vice-President, Dr. A. E. McGrew, Beaver; Secretary, Dr. O. E. Tempelin, Alva. Dr. Hissem of Wichita, read a paper on "Transurethral Prostatectomy," and Dr. C. B. Barker, Guthrie, read a paper on "The Suppurating Ear." Both papers were illustrated by slides and moving pictures.

OSAGE COUNTY MEDICAL SOCIETY elected the following officers for 1933: President, Dr. C. H. Guild, Shidler; Vice-President, Dr. C. W. Williams, Pawhuska; Secretary-Treasurer, Dr. M. E. Rust, Pawhuska; Delegates to state convention, Drs. Divonis Worten, Pawhuska, and C. K. Logan, Hominy; Alternates, Drs. B. F. Sullivan, Barnsdall, and Roscoe Walker, Pawhuska; Board of Censors, Drs. C. H. Guild, Pawhuska; T. J. Colley, Hominy; P. H. Hemphill, Pawhuska.

WESTERN OKLAHOMA MEDICAL SOCIETY met December 20th at the State Sanatorium, Clinton, and the following program was given:

"Prostatic Resection vs Prostatectomy," Dr. J. Z. Mraz, Oklahoma City.

"Some Diagnostic and Therapeutic Pulmonary Problems," Dr. L. J. Moorman, Oklahoma City.

Humorous Paper, Dr. Fowler Border, Mangum.

"Head Injuries," Dr. McLain Rogers, Clinton.

Paper on "Endocrinology," Dr. Henry H. Turner, Oklahoma City.

WASHINGTON COUNTY MEDICAL SOCIETY met December 14th and elected the following officers for 1933: President, Dr. F. S. Etter, Bartlesville, Dr. G. W. Crawford, Dewey; Secretary, Dr. J. V. Athey, Bartlesville; Treasurer, Dr. E. E. Beechwood, Bartlesville; Delegates to the state convention, Drs. J. P. Vansant, Dewey; J. G. Smith, Bartlesville; Alternates, Drs. H. C. Weber, Bartlesville; S. M. Parks, Bartlesville; Censor, Dr. C. C. Wilson, Bartlesville. The above officers were installed at a banquet held January 10th.



MUSKOGEE COUNTY MEDICAL SOCIETY met January 9th and the following program was heard:

President's Address—C. V. Rice, Muskogee.

"Modern Ideas About Eczema,"—James Stevenson, Tulsa.

"Empyema,"—P. P. Nesbitt, Tulsa.

"Pertinent Points on Muskogee County Medical Society in its relationship to its membership and organized medicine,"—R. N. Holcombe, Muskogee.

The following officers were elected at their December meeting: Dr. C. V. Rice, president, Muskogee; Dr. C. E. White, vice-president, Muskogee; Dr. Shade D. Neely, secretary, Muskogee.

MUSKOGEE COUNTY MEDICAL SOCIETY adopted the following resolution at their meeting, December 12, 1932:

**Resolution:** Mr. President, I make the following motion: "That the Muskogee County Medical Society goes on record as favoring the introduction in the Legislature as soon as can be feasible, thru its Representatives and Senator, a Basic Science Bill, which will provide, that an examination in the basic sciences of anatomy, physiology, chemistry, pathology, hygiene and bacteriology must be taken by every candidate for a license to practice any form of the healing art in the State of Oklahoma.

"That a copy of this resolution be sent to the President and Secretary of the Oklahoma State Medical Association, the

Secretary of the Okmulgee-Okfuskee, Tulsa, Oklahoma, Garfield, Pittsburg, and Pottawatomie County Medical Societies, and to the Representatives and Senator of this District. That our delegates to the 1933 Oklahoma State Medical Association be specifically instructed to see that this resolution gets before this body for consideration."

Signed,

SHADE D. NEELY,

Secretary Muskogee County Medical Society.

Resolution seconded by Dr. Halsell Fite, passed unanimously.

States that have passed this bill: Washington, Minnesota, Nebraska, Arkansas, Connecticut, District of Columbia, Wisconsin.

#### DOCTOR D. L. CONNELL

Dr. D. L. Connell, Picher, died November 3rd, after a brief illness, death resulting from bronchial pneumonia.

Dr. Connell was born at Elden, Missouri, in 1871. He graduated from St. Louis College of Physicians in 1910.

He is survived by his wife, and son, Dr. Matt Connell, and three sisters.

Funeral services were in charge of the Masonic Order with interment at Picher.

#### FRANK LIPSCOMB WATSON

Frank Lipscomb Watson, born November 3, 1872, Jackson County, Missouri, died December 21, 1932, at his home in McAlester. Dr. Watson grew to manhood in and around Kansas City, Missouri. He was employed for a time in the Kansas City postoffice and received his medical degree in 1899 from the University Medical College of Kansas City.

He then came to Alderson, Indian Territory, where he established his practice and became associated with Dr. O. W. Rice, which firm cared for the extensive medical and surgical interest of that important mining district. During that year he married Mrs. Emma A. Cunningham, who with four children, Miss Maurine, Miss Helen, Mrs. Alma Newton and Mr. Frank Watson, survive.

Since 1913, Dr. Watson has lived in McAlester, where he limited his practice largely to surgery. He was a member of the Christian Church and affiliated with the South McAlester Masonic Lodge No. 96 A. F. & A.M., and Indian Consistory No. 2. He was a member of the County, State, Southern and American Medical Association and on the staffs of St. Mary's Infirmary and Albert Pike Hospital. He was secretary of the Pittsburg County Medical Society continuously for 15 years except in 1926, when he served as president.

WHEREAS, Dr. Frank Lipscomb Watson passed away on December 21, 1932, the Pittsburg County Medical Society desires to express through its committee appointed at a special meeting, its sincere sympathy to the bereaved family.

The committee realizes how futile it is to express or to assuage the grief felt at such moments, but it hopes that assurance of very high appreciation of the man and the pleasant associations of many years standing and the faithful performance of difficult and tedious duties while secretary of the society shall long be cherished and remembered.

Because the Committee feels the loss of Dr. Watson's fellowship keenly, therefore, be it resolved that this resolution be made a part of the minutes of permanent record of the Pittsburg County Medical Society, and that a copy be tendered to the family and made a part of a notification to the State Medical Journal.

Respectfully submitted,

JAMES C. JOHNSON, M.D.,  
Chairman,

L. S. WILLOUR, M.D.,

T. H. MCCARLEY, M.D.

### THOMAS CLAY SANDERS

1876-1932

At the little town of Lonoke, Arkansas, Thomas Clay Sanders was born, October 19, 1876. He received his early schooling in the public schools of his home, and later graduated in medicine, from Louisville Medical School.

He married Miss Genevieve Larchmiller and to them was born one child, Miss Eleanor.

While he was small of stature he was endowed with an inexhaustible energy. He was interested in diseases of children and public health, having devoted fourteen successive years to public health of the city of Shawnee. He was uncompromising in enforcing rigid public health laws and rules. All contagion received the same consideration; whether in the homes of friends or enemies. He frequently suffered the loss of friends and professional income in requiring rigid observance of quarantine laws. He spoke and wrote much on clean obstetrics and was an untiring prosecutor of illegal abortionists.

During his entire professional career he devoted much time to organized medicine, both county and state; having been secretary and president of Pottawatomie County Medical Society and Chairman of the Pediatric Section of Oklahoma State Medical Association. His home was his office and his farm his work.

His work was almost unvarying in its sameness, yet he kept abreast with progress. He hated shams of all kinds and was fond of exposing them.

In his passing the doctors lost a friend, the people a faithful guardian, the community a patriot and his wife a sacrificing husband.

G. S. BAXTER, M.D., Chairman

J. E. Hughes, M.D.

J. M. BYRUM, M.D.

Committee.

### DOCTOR GUY W. TAYLOR

Dr. G. W. Taylor, pioneer physician of El Reno, died December 18th.

He was born at Chireno, Texas, August 14, 1860. His preliminary education was obtained in the common schools, graduating from the Memphis Hospital Medical College, March 1, 1887. His license to practice was issued October 21, 1897, Canadian County, Oklahoma Territory.

Dr. Taylor has been a resident of El Reno for the past 34 years.

He is survived by his wife, a son of New York City and three brothers and a sister.

### RESERVE OFFICERS TRAINING, WASHINGTON UNIVERSITY

From February 12 to 25, 1933, there will be a training period for Medical Department Reserve Officers of the Army and Navy, made possible at the University of Washington Medical School, St. Louis, Missouri, by the courtesy and enthusiasm of the faculty of this school in cooperation with the Medical Departments of the Army and Navy.

While this is classed as an "inactive duty period" and is without pay or allowances to the participants, the time spent is recognized for the same credits as though it were an "active duty" period. The exceptional clinical advantages of this great medical center, combined with the advanced military and naval training, make possible a very profitable two weeks. The training is open to all Medical Department officers of the Army and Navy reserves, or the National Guard.

The program of the clinics will be under the direct supervision of the faculty of the Washington University. The military instruction, which for the first time includes instruction with reference to the medical service of the Navy, will be under the direct supervision of Colonel George A. Skinner, Medical Corps, United States Army, Corps Area Surgeon, assisted by Lieutenant Commander Reuben H. Hunt, Medical Corps, United States Navy.

Applications for attendance should be forwarded to the Surgeon, Seventh Corps Area, Omaha, Nebraska.

### REGIONAL ILEITIS: PATHOLOGIC AND CLINICAL ENTITY

Burrill B. Crohn, Leon Ginzburg and Gordon D. Oppenheimer, New York (Journal A. M. A., Oct. 15, 1932), describe, in its pathologic and clinical details, a disease of the terminal ileum, affecting mainly young adults, characterized by a subacute or chronic necrotizing and cicatrizing inflammation. The ulceration of the mucosa is accompanied by a disproportionate connective tissue reaction of the remaining walls of the involved intestine, a process which frequently leads to stenosis of the lumen of the intestine, associated with the formation of multiple fistulas. The disease is clinically featured by symptoms that resemble those of ulcerative colitis, namely, fever, diarrhea and emaciation, leading eventually to an obstruction of the small intestine; the constant occurrence of a mass in the right iliac fossa usually requires surgical intervention (resection). The terminal ileum is alone involved. The process begins abruptly at and involves the ileocecal valve in its maximal intensity, tapering off gradually as it ascends the ileum orally for from 8 to 12 inches (20 to 30 cm.). The familiar fistulas lead usually to segments of the colon, forming small tracts communicating with the lumen of the large intestine; occasionally the abdominal wall, anteriorly, is the site of one or more of these fistulous tracts. The etiology of the process is unknown; it belongs in none of the categories of recognized granulomatous or accepted inflammatory groups. The course is relatively benign, all the patients who survive operation being alive and well.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**A Clinical Evaluation of Transurethral Resection of the Prostate.** W. Calhoun Stirling, *Medical Annals of the District of Columbia*, October, 1932.

The author states that indications for resection over prostatectomy are definite and clear cut, including all minor obstructions at the vesical outlet. In large, vascular, intravesical types prostatectomy should be the method of choice. Resection has great possibilities in detecting and resecting them early, thus obviating the impairment of the vital systems. Resection saves the patient considerable time and money, the average stay in the hospital, he states, is ten days. Resection is a highly technical procedure and should be undertaken only by those capable of handling any surgical procedure which may ensue. Resection is only an adjunct to prostatectomy, will not replace it, and the same careful preparation is required in both types of treatment.

**The Management of Prostatic Obstructions by Endoscopic Revision.** Joseph F. McCarty, *New England Journal of Medicine*, August, 1932.

Quoting, "I think it may justly be claimed that with the equipment previously mentioned, we have the means of revision at will of prostatic obstructions in at least 80% of prostatic fibroses, hypertrophies and malignancies, that until quite recently have been done by open operation, that the technique is more surgical and more than is that of digital enucleation, that in skilled hands its mortality is negligible, its hospital domicile is brief—averaging from five to ten days—the rare case a few days longer. Its post hospital morbidity is notable for its absence, and finally it opens up that much wider and more hopeful field of relief of prostatism at its incipency. These individuals may thus be spared that vicious cycle of secondary changes which have heretofore militated against the comfort and economic usefulness of a considerable proportion of men in their early fifties, when their mental capacities is at its peak.

**The Correction of Vesical Neck Obstructions by Means of Resectoscope.** Nelse F. Ockerblod *Journal of the Missouri State Medical Association*, September, 1932.

This author states that in his opinion resection can care for 60 to 70% of vesical neck obstructions. The results will be permanent, it should be confined to the most skilled instrumentalists. The casual cystoscopist must stay out of this field. He does not state whether it is less or more dangerous than a two stage prostatectomy. He be-

lieves it will completely supplant perineal prostatectomy. It will never be more than a supplement to the two stage prostatectomy. It is the best method of closed operations upon the bladder neck because of the complete visualization of the structures to be resected. Contraindications he adds are, infected prostate, infected bladder that cannot be cleared up by catheter drainage, complications such as stone in the bladder, papilloma, or diverticulum, the length of time necessary to perform the operation, the prolonged period of infected urine following the operation, the danger of delayed hemorrhage.

**Observations on the Treatment of Acute Gonorrheal Urethritis.** Meyer M. Melicow, *New York State Journal of Medicine*, August, 1932.

The author states that there is no specific cause for the gonococcus. Acute anterior urethritis tends to be self limited. Gentle treatment and mild antiseptics are best. Excessive and irritating local treatments are largely responsible for the development of posterior urethritis with the resulting complications which prolong the case indefinitely. The gravity apparatus is unnecessary. The insertion of a cotton plug in the urethra is definitely harmful. The complications of gonorrhea have a tendency to get well if treated gently. However, owing to poor drainage, susceptibility to secondary infections, and inaccessibility to local treatment chronicity is inevitable in most cases. While evidences of cure of acute infection are indirect and negative, they should always be obtained and the patient should be instructed in the significance of the tests.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Purulent Pneumococcal Pericarditis Cured by Epigastric Pericardotomy (Pericardite Purulente. A Pneumocoques Guerie Par Pericardotomie Epigastrique)** by Ed Benhamou and P. Goinard, *La Presse Medicale*, October 5, 1932.

After remarking that pneumococcal pericarditis is not often cured because of failure to recognize it, or errors in operation, the following case is reported:

A well-sinker, 25 years of age, entered hospital January 28, 1930, because of left broncho-pulmonary congestion, fever and other evidences of infection. The illness had begun about fifteen days before, after a long bicycle trip, with a temperature of 104 (40 C.), accompanied by delirium, but without a "stitch" in the chest, cough or expectoration. After the onset the temperature was lower, and there seemed to be some improvement, but at the end of eight days the fever went up again, there were irregular chills, diffuse pains

in the chest, about the loins, and in the neck; and there were cough, expectoration and dyspnoea.

When first examined in hospital patient was sitting in bed, bent forward and face flushed. There was dyspnoea and delirium. Coughed only occasionally with abundant expectoration, purulent at bottom, frothy on top. Pulse 100—good quality. Temperature 100 to 102½ (38 to 39 C.). A little dullness right posterior chest, most in inferior third, with some diminution of the respiratory sounds. Posterior left lung same signs on percussion, but there were subcrepitan rales with some small bubbles throughout, more at base.

Heart appeared to be a little large. Traube's space sonorous. No Ewart sign (prominence of fifth rib). No Rotch sign (dullness right fifth intercostal space).

Heart sounds approximated normal. No friction sounds. No evidences of lesions about ori-fices. B. P. "au Vagues 11-7" (110-70). W. B. C. 26,000, polys. 88, monos. 4, lymphos 8.

Blood culture negative.

Sputum showed common bacterial flora without predominance of pneumococci.

The following day the evidences of infection more pronounced, pulse more rapid, temperature higher, tongue saburral and dry. The physical signs in the chest remained about the same.

A teleradiograph, January 30, 1930, showed both lungs clear, but an increase in the size of the cardiac area. The left border of the heart beat regularly, the right border was immobile.

On February 6th another teleradiograph showed slight increase of heart shadow, but no additional physical signs.

During the last half of February there were, in addition to cough and expectoration, more distinct evidences of cardiac weakness.

A teleradiograph made on March 5th showed great increase of cardiac shadow. About this time, on the assumption that there was a suppurative pericarditis, a puncture of the pericardium with a large trocar was made, but without recovery of fluid.

On March 6th epigastric pericardotomy was performed by G. Goinard under local scurocaine anesthesia, following the hypodermic injection of one centigram of morphine 15 minutes before.

Mid-epigastric incision about 5 cm. extending over front of lower xiphoid. The 7th costal cartilage partially sectioned at its union with sternum. Peritoneum pushed back, separated by finger, the pericardium approached across the left anterior pillars of the diaphragm, always with the finger (*toujours au doigt*). The pericardium is recognized by pulsation and resistance. The fibrous sac is partially sectioned by curved scissors upon a fold made by catching and slightly lifting with forceps. At this point a closed hemostat is gently pushed through. Escape of thick pus. Bacteriologic examination showed pneumococcus.

Opening enlarged by spreading forceps. More than 700 c.c. of pus was permitted to escape gradually, suction being employed at the last. The pus was principally in front, below and to the right of heart. It was limited to left and behind by firm adhesions.

Two large drains are left to the right and in front of the heart, and a wick underneath them to protect the contiguous leaflet of parietal peritoneum. The drains were gradually shortened, but not completely removed until a month after operation.

Improvement of the patient was gradual and progressive. He was discharged in good condition April 9, 1930.

The final conclusion of the authors is that there was no important pathology in the lungs—that the trouble from the beginning was probably a pneumococcal pericarditis.

In discussing the diagnostic difficulties attention is called to the value of frequent X-ray examination to determine the size of the cardiac shadow.

The dangers of puncture of the pericardium is definitely emphasized.

**Comment:** If one bears in mind that pus or other fluid in the pericardium produces a triangular area of dullness with the base down, one does not have much trouble in determining whether the pericardium contains fluid.

I agree entirely with the authors about the dangers in connection with blind puncture of the pericardium. Deliberate pericardotomy under local anesthesia is infinitely safer.

—LeRoy Long.

#### Two-stage Abdominoperineal Removal of Cancer of the Rectum. Frank H. Lahey. *Surgery Gynecology and Obstetrics*, November, 1930.

The plan of procedure described was worked out in the Lahey Clinic to meet what seemed to be certain defects in already existing operative schemes in the two-stage abdominoperineal management of cancer of the rectum. Dr. Lahey does not claim originality for this plan, but has found it to be extremely satisfactory in his hands when dealing with these serious risk cases.

The steps of the technique are as follows:

A median incision is made between the pubes and the umbilicus, and the field is investigated for metastases and to determine the operability of the rectal growth. If the growth is operable, the sigmoid is pulled out upon the abdominal wall and the lowest point well above the growth which will reach just above the skin level of the abdominal wall at the pubic end of the abdominal portion of the wound is noted. The mesenteric peritoneum on either side of the mesentery from the sigmoid down to the promontory of the sacrum is cut, and all the vessels in the mesentery of the sigmoid from the bowel itself down to the superior hemorrhoidal vessels, but not including them, are ligated.

Midway between the umbilicus and the left anterior superior spine, a small counter incision is made, through which the permanent colostomy is to emerge. Through this incision a long handled Ochsner clamp is passed and the sigmoid or high rectum is grasped at the point at which its peritoneum has been cut and the mesenteric vessels ligated. Within the original median incision, another Ochsner clamp is made to grasp the sigmoid just below the first Ochsner clamp, and the bowel between the two is severed with a cautery which also sterilizes both ends of the bowel. The bowel and its mesentery are thus divided down



to the promontory of the sacrum, but the superior hemorrhoidal vessels remain intact and nourish the lower segment of rectum. The two leaves of mesenteric peritoneum on either side of the divided mesentery of the sigmoid are sutured together with continuous fine catgut to cover the raw surfaces to which small bowel might become adherent during the interval between the first and second operative stages.

The Ochsner clamp and with it the upper segment of sigmoid included in its grasp are withdrawn through the proposed colostomy opening. A few stitches are placed in the parietal peritoneum of the colostomy incision about the colon, also a few in the fascia and skin until the wound fits snugly, but without constriction about the end of the colon. No stitches are placed in the colon itself because of the fear of penetrating the bowel with leakage and later wound infection. The Ochsner clamp is left in place in the dressing and is not removed until the colostomy is to be opened. This loop of colon should not be too short and too direct to the abdominal wall, but a considerable loop of bowel should be left beneath the colostomy to serve as a fecal reservoir.

The mesentery of the upper loop of colon serving as a colostomy is now sutured to the parietal peritoneum of the left iliac fossa to prevent herniation and strangulation of the small bowel about the colon going to the colostomy opening.

The lower loop with the Ochsner clamp still on it is placed in the lowest point of the median incision just above the pubes and in contact with it, and the wound is sutured in layers about it and throughout its full extent. The abdominal wound is sealed with a cocoon and if it is necessary the colostomy may be opened within a few days. The clamp usually cuts through the bowel of the lower segment within a week, at which time the median wound is healed so that it is no longer susceptible to infection.

As soon as the clamp is off the lower segment, irrigations are carried out two or three times daily with a rectal speculum in the anus, so that water passes freely from the suprapubic opening in the bowel, along the rectum, and out the anus, thus washing out all fecal material and irrigating over any ulcerated and infected area. By this time the colostomy is working well, and as much time as necessary can now be taken to get the patient into the best possible condition for the second stage removal, which can usually be undertaken within two weeks after this part of the operation.

If further delay is necessary, it can be hesitatingly accepted, since the bowels move well enough through the colostomy and the lower segment of rectum remains alive and is nourished through the vascularization by the superior hemorrhoidal vessels and is being cleansed by its irrigations. A few days before the second stage is undertaken, the lower segment of rectum is irrigated several times with mercurochrome or S. T. 37 in an attempt, partly at least, to sterilize it.

At the second stage, the colostomy is sealed with a tight cocoon and the end of the lower segment of bowel which was implanted in the median wound is separated and sutured with silk or chromic catgut in a manner similar to that described for the suturing of the anus in the perineal removal of the rectum. The stump is

painted with iodine. With a clean kit the abdomen is now reopened through the original median incision. An incision in the parietal peritoneum over the superior hemorrhoidal vessels at the level of the promontory of the sacrum is made and the vessels are tied. The peritoneum on either side of the rectum and in front of it is incised. The ureters are identified and dissected out. The rectum and its mesentery are freed from the hollow of the sacrum down beyond the tip of the coccyx, its lateral and anterior attachment also is freed, and the bowel is pushed down into the pelvis. The diaphragm of the pelvic peritoneum is restored above the rectum, and in the female, reinforced by the fundus of the uterus.

The patient is turned on her side. In Dr. Lahey's experience the lateral position for second stage removal of the rectum produces much less drop in blood pressure than does the position with the patient turned completely onto the abdomen.

The anus is sutured, the wound painted with iodine, a clean kit provided and the perineal removal is undertaken in the regular manner, the coccyx being detached or not as seems desirable in the case in hand. After the rectum has been removed, a rubber dam, a cigarette drain or a gauze pack may be inserted in the pelvic cavity as the case demands, depending upon how well oozing has been controlled.

Heretofore, the Miles' procedure has perhaps been the most generally accepted plan of combined abdominoperineal resection of the rectum. With this plan the colon is cut transversely and end colostomy is established either in the upper end of the median wound or in a lateral incision, it being necessary to establish the colostomy at the time that the pelvic dissection is made. Also in this procedure all of the blood supply of the lower rectum is ligated and therefore one has three undesirable features combined. 1. The production of an unopened colostomy obstruction. 2. A large pelvic dissection with a large area of raw tissue in the pelvis. 3. The placing of a dead segment of bowel filled with infected fecal material in this undrained pelvic pocket, which is covered above by the restored diaphragm of pelvic peritoneum. The most undesirable features of the Miles' operation are the production of an intestinal obstruction (obstructive colostomy) at the same time that a retroperitoneal infection is produced in a large, undrained, open pelvic cavity.

It is these undesirable features that have led those dealing with cancer of the rectum to incline toward a one stage combined abdominoperineal removal of the rectum when patients could possibly stand it. This one stage plan of procedure is often not practicable, however, because the shock it produces is great and because many of the patients are too debilitated to endure such an extensive operation.

That the Miles' plan is not entirely satisfactory is evidenced by the variety of modifications which have been devised and described from time to time. among these we may mention that of W. J. Mayo in 1912, Karl Dahlgren in 1913, D. F. Jones in 1915, Fred Rankin and R. B. Coffey.

**Summary:** Dr. Lahey at the time this article was written had employed the operative plan described upon seven patients with cancer of the rectum. His conclusion was that this method is itself not without undesirable features, but, as

a two-stage operation, appeared to offer a nearer approach to the ideal one-stage abdominosacral removal of cancer of the rectum than had other procedures. Among its desirable features are:

1. As much delay and preparation as desired are possible between the first and second stages of the operation.

2. The duration of the steps is better divided, the greater part being done in the second stage when the patient is in the best state of preparation.

3. The necessity of implanting dead bowel in the pelvis is overcome.

4. The second stage involves the removal of a clean empty rectum.

5. Good posterior drainage is established immediately after the extensive pelvic dissection.

**Comment:** Since we have become familiar with Dr. Lahey's technique we have employed it successfully in three patients with cancer of the rectum. In our opinion the statements made by Dr. Lahey as to the advantages of this plan over any previous plan we had used are true in every respect. Since employing it we have approached these serious risk cases with considerably more confidence than previously. We feel that it is a decided improvement in the operation of combined abdomino-perineal removal of cancer of the rectum.

—LeRoy Downing Long.

**Mortality Factors in Gynecology.** Marshall K. Bartlett, M.D., and Fred A. Simmons, Jr., A.B., Brookline, Massachusetts. *Surgery, Gynecology and Obstetrics*, December, 1932, Page 777.

This is a statistical study of the deaths from 1902 to 1932, at the Free Hospital for Women in Brookline, Massachusetts. In those thirty years 17,695 patients were treated in the hospital. 262 deaths occurred of which 95 were cases of terminal malignancy, 19 were cases not operated upon and 148 were the result of operative complications.

Consideration of the operative mortality is the body of the article. In the period stated 16,829 operations were performed, which with the operative mortality of 148 cases gives a gross percentage mortality of 0.96%. Comparative statistics are quoted from other reputable clinics, with the mortality rates from 0.57% to 2.9%.

For purposes of tabulation the gross operative mortality was divided into:

1. Plastic operations with a mortality of 0.22% in a series of 5,526 cases.

2. Laparotomy operations with 1.2% in a series of 3,357 cases.

3. Double operation (i.e., plastic and laparotomy combined) 0.93% in a series of 7,001 cases.

4. Breast operations, examination under anesthesia and miscellaneous cases are also given, but in smaller groups than is necessary for really valuable statistical evidence.

The various divisions stated above are analyzed very completely in both the text and a number of tables.

The next phase of the article deals with the causes of death which are tabulated in the following table:

	Deaths	Per cent	Age (yrs.)
Peritonitis .....	34	22.9	37.5
Shock .....	22	14.9	49.0
Pulmonary embolus .....	21	14.2	52.4
Under ether .....	18	12.3	41.1
Pneumonia .....	16	10.8	44.3
Myocardial failure .....	11	7.4	55.0
Renal complications .....	8	5.4	43.3
Miscellaneous .....	8	5.4	55.5
Acute myocarditis and coronary embolus .....	4	2.7	46.5
Intestinal obstruction .....	3	2.0	48.0
Cerebral accident .....	3	2.0	55.3

Following this there is an association between the cause of death following various operations for specific pathological conditions and the outstanding causes have been discussed. Special attention is given to patients dying under ether during operation.

**Comment:** Numerous statistical reports such as this have appeared in the literature, and there are some who are inclined to look upon them as a moderately useless bit of clerical work. It is my own opinion that they have two very distinct beneficial effects. Firstly, one should be cognizant of the operative mortality in a particular patient's situation, both generally and in one's own experience, before he is justified in subjecting that patient to operation. Especially is this true, as in the case of gynecology, when the operation is an elective procedure. Secondly, such reports as this stimulate surgeons to compare their own experience with those of others and if their mortality statistics are not so good it should influence them to look more carefully into their own work and thereby make improvement.

—Wendell Long.

## BOOK REVIEWS

**Children's Tonsils In or Out.** A Clinical Study of the End Results of Tonsillectomy. By Albert D. Kaiser, M.D., Associate Professor of Pediatrics, University of Rochester Medical School; Chief Pediatrician, Rochester General Hospital; Pediatrician, Rochester Dental Dispensary. Illustrated. J. B. Lippincott Company, Philadelphia, London, Montreal.

This volume is the result of ten years of study of the procedures of end results connected with the removal of diseased tonsils and adenoids. No one longer questions the danger of diseases of these organs, their far reaching effects often end in early fatalities. It is well to note symptoms of some of the findings; for instance mouth breathing due to nasal obstruction certainly paves the way to early tonsillar infection. Other significant features are that in Rochester 40 per cent of 4400 children surveyed, between the ages of 6 and 14 years, had recurrent attacks of tonsillitis. While in a group of rheumatic children, Ingraham and Wilson found that 77 per cent had been subject to recurrent attacks of tonsillitis. It is also remarkably shown that after removal of diseased tonsils and adenoids the incidence of common colds fell from 36 per cent to 3 per cent.



This volume is a strong argument for prompt removal of diseased tonsils and adenoids.

**Synopsis of Gynecology.** Based on the Textbook, Diseases of Women. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor of Clinical Gynecology, Washington University Medical School, and Gynecologist in Chief to the Barnes Hospital and the Washington University Dispensary; Gynecologist to St. Louis Maternity Hospital, St. Luke's Hospital, and the De Paul Hospital; Fellow of the American Gynecological Society and by Robert James Crossen, M.D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Gynecologist to St. Luke's Hospital and De Paul Hospital. 110 illustrations. Cloth. Price \$2.75. The C. V. Mosby Company, St. Louis, 1932.

This volume has been prepared principally for the use of medical students, however, it will be found very useful to many medical men.

**Clinical Gynecology.** By C. Jeff Miller, M.D., Professor of Gynecology, Tulane University School of Medicine; Chief of the Department of Gynecology of Touro Infirmary; Senior Visiting Surgeon, Charity Hospital, New Orleans. Illustrated. The C. V. Mosby Company, St. Louis, 1932. Price \$10.00.

Dr. Miller is one of our best known authorities on gynecology and has been a progressive leader in that line of work for many years. He states in his preface that this work was prepared to follow a former volume "An Introduction to Gynecology." He stresses the fact that it is intended solely for the student, who, because he is just beginning his study of gynecologic therapy, lacks the ability to use the larger and more comprehensive texts selectively. He also omits hyperplasia of the endometrium from the category of inflammatory diseases because he considers them under the head of functional bleeding; likewise diseases of the urinary system and of the lower intestinal tract are omitted, not that the gynecologist does not see them as frequently as the urologist or general surgeon, but because those aspects are more or less devoted to special subjects.

The portion of this work devoted to operative procedures is beautiful as well as practicable. The stages of each operation being set out in detail in order that the student or physician undertaking this work may have a step by step clear cut picture in his mind before undertaking such an operation.

**Infants and Children. Their Feeding and Growth.** By Frederick H. Bartlett, M.D., Director of the Department of Pediatrics, Fifth Avenue Hospital, New York. Paper. 409 pages. Farrar and Rinehart, New York, 1932.

This little volume contains 19 subdivisions, concisely written, about every subject to which infants and children are affected.

**Final Report of the Commission on Medical Education.** Cloth, 560 pages. Issued by the Office of the director of Study, 630 West 168th Street, New York.

This is a statistical work covering every phase of medical education in the United States as well as that offered in foreign countries. It has been in preparation since 1925 and naturally the accumulation of data has required many years.

**Radiologic Maxims.** By Harold Swanberg, B. Sc., M.D., F.A.C.P., Editor of The Radiological Review, Quincy, Illinois. With a foreword by Henry Schmitz, A.M., M.D., L.L.D., F.A.C.S., Professor of Gynecology and Head of the Department, Loyola University School of Medicine. Cloth. Price \$1.50, 126 pages. Quincy, Illinois: Radiological Review Publishing Company, 1932.

#### INCIDENCE OF CARCINOMA IN CERTAIN CHRONIC ULCERATING LESIONS OF THE STOMACH

From a study of the literature and of their own cases, George W. Holmes and Aubrey O. Hampton, Boston (Journal A. M. A., Sept. 10, 1932), believe that it is fair to state that any chronic, indurated, ulcerating lesion occurring in the pyloric antrum within 1 inch of the pylorus, but without involving the pylorus, should be considered malignant until proved to be otherwise, and that proof of the absence of malignancy in such lesions is obtained only by serial section and careful microscopic examination. It is not safe to interpret such lesions as benign from roentgen examination alone or from observation on the operating table. Given a case presenting such a lesion in the prepyloric area, it is probably safer and wiser to treat the lesion by wide surgical removal than by medical or palliative treatment. The same is true of all chronic, indurated, ulcerated, ulcerating lesions occurring on the greater curvature and probably with most lesions occurring in the cardiac end of the stomach. The benign, chronic, indurated, peptic ulcer occurs on the lesser curvature above the antrum or in the region of the pyloric valve. Accurate localization of these lesions is of the greatest importance, but is sometimes difficult; foreshortening of the shadow of the stomach on the X-ray film may make the niche of the ulcer appear closer to the pyloric opening than it actually is. Careful fluoroscopic observation or films taken at various angles should obviate this error. Large ulcers occurring low on the lesser curvature may extend into the region of the antrum; similar ulcers arising in the region of the pyloric valve may extend into the stomach. They should not be classified as prepyloric ulcers. In their presentation the authors purposely avoided a discussion of the various roentgen studies which help to differentiate benign from malignant ulcerations, other than position. They are all important, and all facts, including those obtained from the history and physical examination, should be considered in the final diagnosis.

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NOTE—Corrections and additions to the above list will be cheerfully accepted.



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## FEMORAL HERNIA

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### ANATOMY

In order to best understand the mechanics of femoral hernia, it is probably wise to first consider a brief resume of the anatomy of the femoral region. The femoral canal, through which the hernia makes its exit from the abdominal cavity, is contained within the femoral sheath. This sheath is formed by a prolongation downward, behind the inguinal ligament of the fasciae which line the abdomen, the transversalis fascia being continued downward *in front* of the femoral vessels and the iliac fascia *behind* them. The lateral wall of the sheath is vertical and is perforated by the lumbo inguinal nerve; the medial wall is directed obliquely downward and lateralward and is pierced by the great saphenous vein and by some lymphatic vessels. The femoral sheath is divided by two vertical partitions which connect its anterior and posterior walls. The lateral compartment contains the femoral artery, the middle the femoral vein, and the medial, with which we are chiefly concerned, is the smallest and comprises the femoral canal.

Femoral hernia may be described as a protrusion or extension of the peritoneum through the femoral ring and down the femoral canal. Usually the hernia lies medial to the femoral vein and manifests itself as a swelling of varying size at the lower end of the femoral canal, protruding forward through the saphenous opening. Occasionally this swelling may extend upward and present as a swelling above the level of Poupart's ligament.

Occurrence of femoral hernia as compared to inguinal is rather rare, the proportion being stated by Coley as *one to seventeen*, at the Hospital for Ruptured and Crippled, with similar figures from the London Truss Society.

Robert Rutherford in the Lancet of September 3, 1927, submits the following interesting statistics from the records of the Belgrave Children's Hospital from 1908 to 1927: There were 1098 hernias operated and of this number, 947 were inguinal, 148 umbilical, and 5, or .4 of one per cent were femoral. This would tend to prove that femoral hernia is rarely congenital.

Femoral hernias are more common in women than men and rare in children. They are usually unilateral, the right side being more common than the left. They are rarely ever of very large proportions, but are much more prone to strangulation than the inguinal type, due to the small and rigid ring which the protrusion traverses, and the sharp edge of the fascias forming the anterior wall, making the return of the contents frequently impossible. Strangulated and irreducible femoral hernias occur in much greater relative frequency than the inguinal type.

In order that the importance of femoral hernia may be more properly appreciated, I should like to mention a few circumstances which have been encountered in connection with operations for this condition.

Richard Hubrich in 1929, reported the case of a woman, aged 75, in whom a hernia of twenty years standing suddenly protruded and could not be reduced and operation revealed the contents of the sac which included the appendix, right tube and ovary and the right half of the senile involuted uterus. The patient recovered in three weeks.

Norman Hodgson in October, 1925, reported a case of strangulated femoral hernia associated with an appendiceal abscess in the hernial sac, which occurred eight months previously. The sac revealed an active draining sinus on its medial side. Operation showed the appendix in the sac with a perforation at its tip, in addition to a loop of strangulated ileum.

This patient was a woman 70 years of age. The operation was followed by uneventful recovery.

In the March, 1926, issue of *Surgery, Gynecology and Obstetrics*, Walter Hughson, publishes a case in which a varix of the superficial epigastric vein was diagnosed and operated upon as a femoral hernia. It was ligated and excised and followed by rapid and uneventful recovery.

A large diverticulum of the bladder measuring about 5 cm. in diameter was found to be the contents of a femoral hernia in a woman, aged 54. The report of this case was published by Traxler in 1928. At operation, the diverticulum was removed and the patient discharged as cured on the eleventh post-operative day.

#### ETIOLOGY

In the July, 1924, *British Journal of Surgery*, J. Phillip Buckley of Manchester, discusses at great length the etiology of the femoral hernia sac and concludes that it is a preformed sac and is not formed contemporaneously with the expulsion of a viscus. In general, the contributing causes of acquired femoral hernia may be accepted as hard manual labor, any prolonged straining or exertion; prolonged increase in intra-abdominal pressure, especially as in pregnancy; trauma, generally relaxed abdominal walls, emaciation with loss of all preperitoneal fat around the femoral opening, etc. A few workers have claimed that operation for inguinal hernia, which tends to elevate the edge of Poupart's ligament predisposes to femoral hernia.

#### DIAGNOSIS

The symptoms are similar to those of inguinal hernia. The bulging however, first presenting below Poupart's ligament and is increased by straining and coughing. On palpation, the mass may be quite tender and there is usually an impulse on coughing. Frequently the mass cannot be reduced due to the rigidity of the femoral ring.

The diagnosis can usually be made without difficulty but occasionally it is necessary to rule out enlarged inguinal glands, psoas abscess, inguinal hernia and very rarely a varix of the saphenous vein, and lipomas over the femoral area.

#### TREATMENT

After making a diagnosis of femoral hernia one must decide by what method

to effect a cure. There are two routes which are most generally accepted, as offering the most effective means of securing permanent relief from this condition.

The first, and the one most commonly used is by the femoral route, while the second is from above by the inguinal route.

The results of both methods are approximately the same as reported by Watson, who collected 675 cases from various clinics with the following results:

Four hundred sixty-nine cases were operated by the femoral route with the closure of the ring from below with 19 recurrences or a percentage of 4.05; while 206 cases were operated by the inguinal route, with 10 recurrences or a percentage of 4.85.

From the above figures it would seem that the femoral route is slightly preferable; since the percentage of recurrences is slightly less and also possessing the advantage of not invading the peritoneal cavity and possibly traumatizing or infecting the viscera, producing adhesions and potential intestinal obstructions.

The inguinal route is undoubtedly preferable in the presence of damaged viscera which may require resection of gangrenous intestine or removal of a portion of the bladder, an acutely inflamed appendix or adnexal complications. It also has the advantage of a higher ligation of the hernial sac and a better view of the ligaments and fascia around the femoral ring. Unless there is evidence of visceral destruction or gangrene of intestine, I am personally inclined to favor the femoral route.

There are a number of other more complicated procedures which have been devised by various workers, using various types of flaps and plastic closures providing a stronger closure of the ring while going to the opposite extreme is Ochsner who advocated only a thorough dissection and high ligation of the hernial sac with no closure of the ring whatever.

#### OPERATIVE TECHNIQUE

With your indulgence I should like to review very briefly the two most commonly used procedures, the first of which is the Bassini or some modification of it and is described as follows:

An incision about 8 to 10 cm. long is made parallel to and 1 cm. below Poupart's ligament, through the skin and sub-



cutaneous tissue. Care must be exercised here to avoid injury to the saphenous vein. The falciform portion of the fascia lata is exposed and the femoral vessels and nerve located. The sac is then isolated and freed of all fat, drawn down, ligated as high as possible, and removed. Occasionally, the contents are not readily replaced due to the small ring and it may be necessary to nick a small portion of Gimbermat's ligament to reduce the contents into the abdomen. The next step is the closure of the femoral ring which is effected by suturing the falciform portion of the fascia lata and Poupart's ligament above to the pectineus fascia below. This can usually be accomplished with from two to four interrupted sutures of 30-day chromic catgut.

The interrupted sutures are preferable to a purse string closure of a single suture which might possibly break and permit a recurrence of the patency of the femoral ring. The remainder of the closure is completed by any method in use by the individual operator.

The second most commonly used method is by the inguinal route and is credited to Ruggi of Bologna, who advised its use in 1893, and who developed and perfected the technique. However, it was first used by T. Annandale, whose report was published in the *Edinburgh Medical Journal* in 1876.

Very briefly the method is as follows: An incision is made  $1\frac{1}{2}$  cm. above and parallel to Poupart's ligament, the medial extremity extending beyond the external inguinal ring down over the pubic bone. The external oblique fascia is divided in the direction of its fibers and the edges dissected back. The conjoined tendon and spermatic cord are exposed and retracted upward and Poupart's ligament thoroughly exposed. The transversalis fascia is divided medial to the deep epigastric vessels, which are retracted laterally. The peritoneum is then opened, the hernia reduced and the sac is inverted as in turning the finger of a glove inside out. It is then ligated at the level of the peritoneal cavity and excised. Closure of the ring is next accomplished by suturing Cooper's ligament to the shelving edge of Poupart's ligament with interrupted chromic catgut sutures.

The repair is completed as in repairing an inguinal hernia, except that the cord is not transplanted.

Advantages of the inguinal method are:

1. Higher ligation of the hernial sac.
2. The structures about the ring are more easily defined and are more accessible.
3. Damaged viscera may be repaired without the necessity of a second invasion.

In conclusion, permit me to emphasize the importance of surgical intervention in all cases of femoral hernia, since the relative occurrence of strangulation and obstruction is quite high. There appears to be little preference as to the method used or by what route one elects to effect a cure, so long as the method accomplishes two rather vital considerations: A high ligation of the femoral sac and obliteration of the femoral ring.

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#### EFFECT OF DIGITALIS ON ARRHYTHMIAS OTHER THAN FLUTTER AND FIBRIL- LATION OF AURICLES

Charles W. Barrier, Fort Worth (*Journal A. M. A.*, Sept. 3, 1932), reports that in two cases of supraventricular tachycardia, digitalis was given by vein and was followed by slowing of the rate of the paroxysm and the restoration of sinus rhythm. In one case the effect was supposed to be due to direct action of digitalis on the heart muscle. In the other case the effect was thought to be due to increased vagal tone as the heart under digitalis behaved as when the vagus was mechanically stimulated and because digitalis failed to abolish the paroxysm after the vagus was paralyzed by atropine. In extrasystolic arrhythmia the use of digitalis is occasionally of benefit in relieving both the disturbing rhythm and the symptoms of heart failure. It will abolish extrasystoles more frequently than the literature would indicate. Cases are reported in which all three types of extrasystoles were abolished. The author believes that digitalis is probably effective through its action on certain factors involved in circus movement.

## BURN CONTRACTURES

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Burns should always be considered as surgical problems. If they are thought of apart from their general systemic reactions, they are lesions resembling ordinary wounds, because they produce a sudden break in the continuity of the surface tissues, brought about not by direct violence, but by trauma of a physio-chemical nature.

Much has been written and said relative to the various classifications of burns, as to degree, extent, structures involved, et cetera, but to my mind, David Goldblatt's classification of "scarring" and "non scarring" burns is the most logical. According to this classification a "non scarring burn" would vary from a simple hyperemia of the area without loss of structure, to a more severe inflammation and congestion with the early and rapid formation of blisters. In the "scarring burn," there is a destruction of the whole skin layer usually involving the underlying structures. There is a coagulation of the cell contents, destruction or thrombosis of the blood vessels of the corium, and the inter-cellular spaces are filled with broken down albuminous products. Healing cannot take place until this dead tissue is removed, or allowed to slough away.

With this classification and pathological picture of the two types in mind, one readily sees that there will be no resulting contracture as a result of the "non scarring" burns, unless secondary infection with cellulitis and abscess is superimposed. With the "scarring types" contracture is to be expected.

The time allowed, and the subject assigned for this paper, do not permit a lengthy dissertation upon the treatment of burns, but any discussion of burn contractures must of necessity require some discussion relative to treatment of the burn itself.

I shall not discuss treatment in general, but only that phase of treatment which has a bearing upon contractures. In general, contractures can be prevented, but most text books and works of reference pass very superficially over this phase of treatment. And as a result, we who are attempting to give relief to deformities and contractures, see many of these unfortunates with their disabling contrac-

tures and scars. From them can be elicited, as a rule, the history of a long drawn out treatment of the original burn, with numerous and unavailing operations to correct the deformity, and to prevent the recontraction of the scar tissue.

The primary and immediate subsequent treatment of any burn should take cognizance of the possibility of future contractions, and definite plans should be made to prevent their development.

1. The first consideration should be some form of splinting, traction or position, that will mechanically prevent contracture. In burns of the anterior and lateral part of the neck and chin, a felt collar wrapped with gauze is applied to maintain the head in the midline with the chin directed upward. Burns of the axillae and about the shoulders should have the arm kept in extreme abduction to prevent not only contracture, but the possibility of adhesion of the arm to the chest wall; those involving the elbow, wrist, and fingers, should all have splinting to maintain a position opposite to that of the expected contracture. Burns about the inguinal, femoral and perineal regions require the position of abduction and extension of the thighs, which may even require plaster casts to maintain; those of the popliteal space, feet, ankles, toes, like the upper extremity should be maintained in the normal anatomical position or if deemed necessary, in a position of over correction to that of the forming contraction. With extensive burns the splinting and maintenance of normal position is sometimes a very vexing problem. One of the best methods, I have found in meeting such situations, is the immersion of the individual in a hypertonic saline bath, as advocated by Blair and Brown. It is surprising how an individual writhing in pain, and definitely starting contracture of a part, will relax in the warm saline bath, and the contracture easily prevented by moderate traction. It is my opinion that burns treated by the warm hypertonic saline bath have less tendency to form contracting cicatricial tissue. This procedure is not difficult of administration, nor does it require elaborate equipment. I have been using a wooden box frame, without top or bottom. This is lined with ordinary rubber sheeting. It can be constructed with a head rest, or a cloth swathe across one end for the head to rest upon. It is set upon the bed and filled with saline solution. For covering



and warmth, a cradle with electric lights is used.

2. The second consideration is the early clearing of the burned area of necrotic and sloughing tissue. This may be by actual surgical debridement, or by the use of some antiseptic solution, as Dakin's. Then following this with adequate treatment of the burn and whatever method desired that will cause the rapid formation of clean, healthy granulation tissue.

3. The third and last consideration is early skin grafting to promote rapid closure of the wound and thereby lessen the amount of dense fibrous tissue that would form in an open contracting wound.

These statements sound very elementary and perhaps like platitudes, but I sincerely believe that if they were followed in the treatment of the "scarring type of burns," there would be a decided decrease in the number of burn deformities.

With this discussion of the preventative aspect of the treatment of contractures, we now come to the treatment of the actual contracture. A large per cent of individuals with such contractures have had several attempts made at correction before they reach us. These attempts, as a rule, are not directed at adjusting the entire pathology, but only the superficial part and consequently a recurrence results. Blair early called attention to this and it was his opinion that the first, most important and absolutely controlling step in any restorative operation, was to cut or remove the scar tissue sufficiently to allow the remaining skin and tissues to return to their normal positions. Unless this is done thoroughly, often to over correction, the operation cannot be completely successful. In old standing cases, osteoplastic resections, joint stretching, or tendon lengthening may be necessary adjuncts to simple scar excision.

The scar tissue having been excised and the surrounding skin mobilized, the open area must be closed. The best method is the implantation of normal skin and subcutaneous tissue. This may be accomplished in many ways, but the two favorite and widely accepted methods in use today are, the "pedunculated flap graft" and the "free full thickness graft." They both

have definite indications and uses, as well as specific disadvantages.

The "pedunculated flap graft" is especially useful in those cases where blood vessels, nerves, tendons, bones, or joints are openly exposed in the wound, and it is necessary to furnish protection with subcutaneous tissue to these structures, as well as to cover over the epithelial defect. It is especially useful in locations where immobilization with pressure upon the graft is impossible. It can be used in the presence of superficial infection, since it has an adequate blood supply of its own, it can more readily resist and combat infection. The chief disadvantages of this type of graft are, the necessity for immobilization, and the length of time required in transferring it.

The "free full thickness graft" is indicated in freshly prepared clean wounds that require a minimum amount of subcutaneous tissue. The advantages over the "pedunculated flap graft" are, no period of prolonged immobilization, all operative wounds are closed, and thereby the danger of infection from open wounds lessened; and lastly, the operation is complete in one stage.

When the area has been covered, and healing is complete, early physiotherapy is indicated. All the tissues in the neighborhood of the contracture have been weakened by dis-use. A good, patient, masseuse, some form of radiant heat, together with graduated exercise, can aid very materially in restoring the part to its fullest range of function.

This, in brief outline, is my way of treating these conditions. John Staige Davis has very aptly stated that no one rule, or set of rules, can apply in handling these cases, but if a single rule should be set down, it would be the use of extreme carefulness and patience and constant reorganization of therapy.

1200 N. Walker.

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DISCUSSION: *Dr. R. L. Murdoch*, Oklahoma City.

Dr. Burton spoke of only two methods of skin graft, but in the slides he mentioned Thiersch grafts also. At Walter Reed Hospital they are also very partial to detached skin grafts. In contractures of the elbow or axilla or something of that sort, they punch a knife into the contracture and then, having gotten a piece of skin, bury that skin into the scar with the skin surface on the outside and the raw surface towards the main point or border. A particularly interesting feature of the detached dermal skin graft into strictures of the rectum, and just recently the American Proctology Society reported some of these cases, where they had used this detached dermal skin graft, and it is a surprising thing that those plaques of skin live even in the rectum, probably because after being buried there it is in sterile tissue, it can't skid after it is placed there, and it has the advantages of normal tissue tension placed on it. It just brings to mind the fact that we use a number of methods, and that there are a number of methods of grafting in skin.

*Dr. Burton*: There are several methods, but in my opinion, these I have used are the best procedures.

#### ADHESIONS OF ANTERIOR SURFACE OF LIVER

According to Arthur H. Curtis, Chicago (Journal A. M. A., Dec. 10, 1932), adhesions of the anterior surface of the liver are a not infrequent complication of gonorrheal disease of the fallopian tubes. These adhesions apparently develop during the acute stage of the pelvic infection. The differential diagnosis of pain in the right upper quadrant of the abdomen in women should include consideration of adhesions of the anterior surface of the liver. If the cause of the pain in the right upper quadrant is difficult to determine, a pelvic examination may serve to differentiate. Conversely, in the presence of a pelvic inflammatory mass of unknown etiology, a history of pain in the right upper quadrant, in the region of the liver, may be of material moment in the differential diagnosis of the etiology of the pelvic lesion.

#### PELLAGRA\*

C. C. GARDNER, M.D.  
ATOKA

What is it? An avitaminosis—a symptom complex; a disease due to moldy, rotten maize, or corn, lacking the amino fatty acid—an infectious disease due to the simulum reptans, mosquitoes, nematodes—a toxic condition, due to silica or aluminum.

To me, pellagra means an avitaminosis plus something else, usually something surgical. When in New Orleans, in 1915, I heard a lecture at Tulane, in which the lecturer divided pellagra into three stages:

1. The pre-eruptive stage, characterized by neurasthenia.
2. The eruptive stage, and
3. The cerebo spinal stage, characterized by changes in the brain and cord.

I have been to many meetings since, but have never heard it classified that way. During the war, I met Dr. Robert L. Benson, formerly Assistant State Bacteriologist for the State of Florida, now bacteriologist for the City of Portland, Oregon. His theory was, that pellagra was always complicated with some surgical condition, or followed the acidosis of some severe illness or disease.

The following cases in my opinion lead me to believe that his theory is worth careful consideration and study.

*Case No. 1.* Seen in 1910 at All Saints Hospital at McAlester; a man about 55 years of age, who had had a recent amputation above the knee, was found one morning to have developed many bright red macules on the back fore-arm. These resembled mosquito bites. These coalesced, and in a few days a typical pellagrous erythema covered the dorsal surfaces of both fore-arms.

*Case No. 2* Mrs. L. W. D., a multiparae, who had been sick for months. When I saw her, she had a typical erythema, which gradually grew dark and changed to a dirty, rough, chapped condition. She had a very marked diarrhoea, and was ataxic. Besides pellagra she had extensive lacerations of the cervix and perineum. This family had mosquitoes,

\*Read before the Southern Oklahoma Medical Association at its Semiannual Session at Atoka, Oklahoma, on December 10, 1931.



nats and bed bugs in abundance to contend with. However, they had chickens, eggs, milk and butter and the pellagra was evidently due not to not having food, but being unable to eat same. Patient developed paralysis of the bladder, became insane and died.

*Case No. 3.* A woman with extensive cervical and perineal lacerations.

*Case No. 4.* Had pyelitis complicating.

*Cases Nos. 5 and 6.* Were men above 60, whose pellagra followed lobar pneumonia. One of these cases had one dose of salvarsan intravenously, and was later put on Fowler solution to point of tolerance. He recovered completely and lived eight years.

*Case No. 8.* Pellagra followed lobar pneumonia. Patient had extensive pyorrhea and chronic gastritis. I gave this man a prepared creosote mixture, the first dose of which made him feel like he had swallowed a little undiluted fire.

*Case No. 9.* A woman with pellagra and pyelitis, which she thought due to water in a shallow, sandy well.

*Case No. 10.* A woman living in filth, flies and food deficiency. This woman had two small children with pellagra.

*Case No. 11.* Mrs. W. R. S., recovered from pellagra under cacodylate of soda. This recurred two years later, at which time she had pyelonephritis and necrosis of the lower jaw bone, the removal of which might have prevented the recurrence.

*Case No. 12.* Had pellagra and gall stones; well to do, and plenty of food.

*Case No. 13.* Had food deficiency, and a few malarial chills; one of her children developed pellagra. Quinine and diet and sulpharsphenamine cured her. Since her recovery she has had normal labor and is well.

*Case No. 14.* This patient had a very marked diarrhea. Was extremely emaciated, and I felt that he would die within three months. Gave him twenty-five doses of sulpharsphenamine; gave him opiates and bismuth for his diarrhea, and put him on a proper diet. He is still living, with no evidence of pellagra at the present.

*Case No. 15.* Age 33;  $\frac{7}{8}$  Choctaw; married, mother of three children. Father died of alcoholism; mother died following a miscarriage. Usual diseases of childhood, and small-pox. Health good until June, 1931, when her appetite began to fail.

Weakness, sense of weight on chest; had to take deep breaths; (air hunger) marked tenderness over the gall bladder, and unable to eat. Appetite grew steadily worse. Usual weight 100; present weight 86 pounds and below. This patient's appetite continued very poor, and she was unable to eat very much food of any kind, developing a degree of starvation acidosis. She had periods of great weakness, thinking she was about to die, but would be better when I arrived. September 20th, I found the typical erythema of pellagra.

In my opinion enough stress has been laid upon diet, but not enough consideration given to the complications which accompany pellagra. Many of the patients I have seen needed surgical operations to enable them to eat without pain; and a balanced ration. In my experience pellagra has always followed some severe illness or acute infection, during which a patient developed a starvation acidosis.

The third stage resembles pernicious anemia in many respects, and I notice in reading the pathology, combined sclerosis is mentioned. A brief description of acidosis and pernicious anemia is helpful in classifying the existing chaotic status of this symptom complex. Acidosis is described as follows:

#### ACIDOSIS

*Hypo-Alkalinity of the Blood.* Acidosis denotes a diminution in the alkali reserve (chiefly bicarbonate and phosphate) of the blood. As acids appear in the body, either as a result of normal metabolic processes (producing especially  $\text{H}_2\text{CO}_3$ ) or of disease or indigestion, they are neutralized by alkalies, the resulting salts being eliminated mostly in the urine and the  $\text{CO}_2$  via the lungs;  $\text{HCl} + \text{NaHCO}_3 \rightarrow \text{NaCl} + \text{CO}_2$ . The red blood cells, probably by virtue of their haemoglobin, can take up and bind acid and form bicarbonate according to the following reversible reactions:  $\text{H}_2\text{CO}_3 + \text{NaCl} \rightleftharpoons \text{HCl} + \text{NaHCO}_3$ .

The HCl is retained in the cell; and the  $\text{CO}_2$  is excreted in the lungs and NaCl reformed. Diacetic and B-oxybutyric acids arise from the incomplete oxidation of fats and the amino-fatty acids of the protein molecule, as in diabetes. Lactic acid arises from the incomplete oxidation of carbohydrates, as in excessive muscular exertion, pneumonia, rebreathing of expired air, carbon monoxide poisoning, and severe anemia. The acidosis of nephritis is due to the retention of acid phosphates.

The acid-base equilibrium of the body is maintained by (1) the buffer action of the sodium bicarbonate, sodium and potassium phosphates and protein of the blood, whereby additional acid or alkali may be taken up without changing the actual acidity or hydrogen-ion concentration (q-v.), as illustrated by the following equation:  $\text{Na}_2\text{HPO}_4 + \text{HCl} = \text{NaH}_2\text{PO}_4 + \text{NaCl}$ ; (2) the production of ammonia from urea; (3) the elimination of acids by the kidneys; and (4) the elimination of carbon dioxide by the lungs from its union with sodium bicarbonate. Carbon dioxide in the blood stimulates the respiratory centre and thereby promotes its own elimination.

In acidosis the carbon-dioxide tension in the alveolar air is diminished, owing to increased ventilation of the lungs, due to stimulation of the respiratory center. The normal tension is about 40 mm.; a tension below 35 mm. means acidosis; 20 mm. indicates danger. Morphine raises the tension; caffeine, by stimulating respiration, lowers it. The symptoms of acid intoxication, are dyspnoea (deep breathing of the "air-hunger" type, or a cyanotic hyperpnoea, due to increase of  $\text{CO}_2$  in the blood), indigestion, burning pain in the pharynx or epigastrium, nausea, vomiting, lassitude, various nervous manifestations, headache, increasing drowsiness, and finally coma.

The causes of acidosis are: Diabetes mellitus; *starving from any cause*, as rectal feeding, oesophageal stenosis, etc.; non-carbohydrate diet; incomplete oxygenation of the blood, as in pneumonia, emphysema, tuberculous pneumothorax, mountain sickness, CO poisoning, cardiac insufficiency, dyspnoea from any cause; certain toxic conditions of the liver, as in cyclic vomiting of pregnancy, hepatic cancer, acute yellow atrophy, portal cirrhosis, eclampsia, and phosphorus and chloroform poisonings; salicylate poisoning; cyanide poisoning; thyrotoxicosis; nephritis; severe sepsis; severe diarrhoeas of children; severe burns, cholera; kala-azar; heat stroke; deep ether anaesthesia; shock.

The normal pH of the blood is between 7.3 and 7.5 (7.4 is the pH of water). At or near 7.0 coma occurs, and beyond 7.8, symptoms of tetany. The hydrogen-ion concentration depends upon the ratio of dissolved carbonic acid to bicarbonate, e. g., ( $\text{H}_2\text{CO}_3$ ) over ( $\text{NaHCO}_3$ ), normally 1-20, or 1.20. The greater the proportion of  $\text{H}_2\text{CO}_3$ , the greater the hydrogen-ion

concentration and the lower the pH, and vice versa. But the blood holds the normal ratio with extreme tenacity. As long as this ratio is maintained, a potential acidosis is said to be compensated; otherwise it is a decompensated acidosis.

From case No. 15, and my cases, which have been preceded by lobar pneumonia, and other infectious diseases, I am forced to conclude that starvation acidosis is a major factor in the first two stages of pellagra. This is gradual and insidious; it accounts for the air hunger seen, and throws metabolism out of balance.

This leads me to believe that potential acidosis, long continued, and due to starvation from the avitaminosis (due to poverty, or gastro-intestinal gynecological genito-urinary affections) eventually becomes decompensated, and when this occurs, hydrolytic cleavage of the carbohydrates and suboxidation of proteins and fats, are responsible for destructive changes in the blood cells, and (particularly the R. B. C.) and neurotoxins elaborated, which by their effect on the spinal and sympathetic nervous systems produce the pellagrous erythema.

Lack of vitamin A produces sore eyes, and blindness in the Eskimo.

Lack of vitamin D produces rickets and distortion of the osseous system in children.

Lack of antineuritic vitamin B2 in rice produces beri-beri in the Japanese and Chinese.

These facts lead me to believe that acidosis is a major factor, and if long continued leads to a severe anemia eventually showing some of the ear marks of pernicious anemia, e. g., combined sclerosis.

The three A's—acidosis, avitaminosis and anemia should all be considered instead of only the A of avitaminosis.

Hydrochloric acid is practically absent in pernicious anemia according to the Mayos.

In typhoid fever and lobar pneumonia if we fail to feed our patients (which I do not), we soon see every evidence of acidosis, and the patient is soon forced to live on his own tissue proteids, carbohydrates and fats, hydrolytic cleavage may be retarded or incomplete, and the suboxidation of proteids might lead to some by-



products between the acids, albumins and the peptones getting into the blood.

The diagnosis of pellagra is usually made from the typical erythema which is symmetrical, and resembles sun burn; is on exposed surfaces and is usually a duller red than erysipelas or sunburn. This progressively becomes darker until a dirty back chapped appearance is seen. At times the eruption is macular.

The pre-eruptive diagnosis is seldom made, but the following symptoms should cause us to think of pellagra.

1. Symptoms of neurasthenia and starvation acidosis—such as air hunger, collapse, great weakness, cardiac distress.

2. Symptoms which would suggest an incipient Tbc., but afebrile, and with a negative lung examination.

3. The history of an acute severe illness during which millions of R. B. C., were destroyed, as in acute malaria and lobar pneumonia, where the oxygen carrying cells were diminished and the CO<sub>2</sub> increased.

4. The history of indigestion, due to gall bladder infections, appendicitis, genito urinary infections, etc., which bring on a starvation acidosis, which, coupled with a food deficiency, either due to poverty or digestive weakness, and which leads to anemia.

#### TREATMENT

1. The relief of starvation acidosis by diet or by surgery's removal of the surgical entity interfering with digestion.

2. The removal of infected teeth, drainage of the sinuses.

3. The eradication of malaria and intestinal parasites.

4. The control of diarrhea by opiates and bismuth.

5. The administration of sulpharsphenamine in 0.4 and 0.6 gram doses, which has in my estimation halted pellagra cases in which cerebro spinal symptoms were present.

6. Balanced diet after infection has been removed, and the conditions which interfere with hydrolytic cleavage of carbohydrates, and suboxidation of the proteids due to hypochlorhydria, lack of bile—pepsin, etc., are removed.

We must take into consideration every factor concerned in proteid carbohydrate and fat digestion—remove every obstacle interfering with same—relieve the anemia with iron and arsenic.

Pellagra in my opinion has more than the one A—that of avitaminosis. It has three.

1. Acidosis.
2. Avitaminosis.
3. Anemia.

The division of pellagra into three stages, and the consideration of the two others, H-C acidosis, and anemia, ought to lead to earlier diagnosis.

—o—

#### EXPLOITATION OF THE MEDICAL

Everywhere it is rampant—newspapers, magazines, billboards, radio. "Your doctor will tell you that . . . ." "Medical science has found that . . . ." "The greatest specialists in Timbuctoo say that . . . ." And the rest of the story is, of course, "Use our pills or our vitamins three times a day; ask your doctor."

You are forced to compete with those who offer your patients free advice regarding medical treatment. You deliver Mrs Blank's baby today, and tomorrow she will receive by mail samples of baby foods with complete directions how to use them. Indeed, some physician representing a commercial organization and knowing that the case is in your hands may address a personal letter to your patient offering his services free.

It has been said that ten more years of the present trend of interference in medical practice will do away with the need for private practice of infant feeding and other branches of medicine.

Mead Johnson & Company have always believed that the feeding and care of babies and growing children is an individual problem that can best be controlled by the individual physician. For over twenty years and in dozens of ethical ways we have given practical effect to this creed. We hold the interest of the medical profession higher than our own, for we too, no doubt, could sell more of our products were we to advertise them directly to the public.

So long as medical men tacitly encourage the present trend, so long will serious inroads continue to be made into private medical practice. When more physicians specify Mead's Products\* when indicated, more babies will be fed by physicians because Mead Johnson & Company earnestly cooperate with the medical profession along strictly ethical lines and never exploit the medical profession.

\*Dextri-Maltose Nos. 1, 2, and 3; Dextri-Maltose with Vitamin B; Mead's Viosterol in Oil 250 D; Mead's 10 D Cod Liver Oil; Mead's Newfoundland Cod Liver Oil; Mead's Cereal; Mead's Brewers Yeast Powder; Mead's Powdered Lactic Acid Milk Nos. 1 and 2; Mead's Powdered Whole Milk; Alacta; Mead's Powdered Protein Milk; Casec; Recolac; Sobee.

## PUBLIC HEALTH OR STATE MEDICINE\*

W. G. RAMSAY, M.D.  
QUINTON

There are calls coming from all parts of the country for more and better medical facilities. These calls are coming very faintly and in minor strains now but before long the calls will be in demanding tones and for radical measures. Expressions are too numerous and too positive to be ignored and the wily politician and demagogue are too alert to allow any fertile field to go unoccupied.

There is a movement known as state or social medicine which is spreading over the civilized countries. Being now in operation in twenty-two different governments and considered by several others. Several of our American states have had bills introduced which, if becoming law, will constitute what seems to me a very one sided and vicious form of socialistic or paternal government.

Before going into the discussion very far, however, let us get our ear close to the ground and try to appraise the potential tendencies. How the evolutionary processes develop from one degree to another in an insidious and steady manner until when we awake we are swept very far into or across the Rubicon.

A few years ago we thought nothing of industrial insurance. It seemed quite plausible and a step well taken. Now we hear agitations for old age pension. We are sorry for the old and destitute. We are glad to see them cared for. It will probably be handled on the insurance plan with the state as administrator. What of that? It is just another straw blowing in the direction of state paternalism.

Now the doctors are leaving the country and villages for the cities. Something will have to be done to care for the people so deserted. Dr. Hugh Cabot, at the late Oklahoma City conference, said "if the doctors did not meet the situation the law makers would solve the problem for them." Dr. Bizzell at the same conference said "the lay view of the profession was that the doctors were more interested in curing than in preventing disease." This I believe is true but the reason is obvious.

People are anxious for our advice when they are sick but care nothing for it when well. Dr. Bizzell's talk was timely, for it is always good to see ourselves as others see us, but I do not believe Dr. Bizzell fully understands the many sacrifices that have and are being made by the profession for the promotion of public health.

With our ear to the ground what rumblings do we hear? What agencies do we find at work?

1. The National Tb. Association.
2. American Heart Association.
3. Cancer Commission.
4. U. S. Public Health Service.
5. American Child Health Association.
6. Army and Navy Public Health Service.
7. Bureau for the promotion of Health of Maternity and Infancy.
8. Committee of 45 to study the cost of medical care.

The last is a fact finding body with a million dollars subscribed to defray the expenses of the committee and from some of their preliminary reports the final will, I am convinced, amount to about as much as the Wickersham Committee, with my sincere apologies to Mr. Wickersham's Committee. In addition to these there are literally hundreds of others, locally and otherwise too numerous to catalogue here.

What does all this mean? It means just what any multiple of remedies always means, that is, that there is really no effective remedy for the malady. And it means too that they are all straws blowing in the same direction. These eight agencies are all national, wholesome, earnest, and smoothly working organizations with definite objectives, for the education, promoting the health, prolonging the life and making a better people, but what I want you to get is that there is a definite health consciousness, a desire on the part of the people to do more, an uneasiness or solicitude for the health of the public and a desire or disposition of the state to do it's part as evidenced by the State Industrial act. The Crippled Children's act, the fundings for the care of the poor sick adults and the hospitalization and care of the tubercular. All of which is well and good, but calling on medical statesmanship, for guidance.

Now what shall we have? Shall it be

\*President's address of the Southeastern Oklahoma Medical Association, delivered at the Semi-Annual Meeting at Atoka, Oklahoma, December 10, 1931.



socialistic medicine or public health? But first, let us see what state medicine is doing and leading to, in two of the twenty-two countries now operating this system. Just a glance at England and Germany is all there will be time or need for study in this paper.

The English system has been in operation now twenty years. It is largely an industrial country and is much more workable on that account. About 38% of the entire population is covered with this form of insurance. The employer pays 3-7, the employee pays 3-7, and the government pays 1-7, in addition to administration expenses. The whole amounts to about \$2.60, per capita, per month, which is accumulated into a fund from which is paid the doctor's fee, the medicine bill, and compensation for loss of time from sickness or accident. The average fee for a doctor's visit is about fifty cents and other services in proportion. This too, is all very well if all are happy. What makes a doctor happy? A large income just the same as other folk. How does he increase his income? By catering to his clientele—just human. He writes lots of prescriptions, sees 40, 50, or a hundred patients a day, certifies them sick every time they want to go fishing, play cricket or just draw compensation and rest. What has happened? Sick benefits increased from 41% to 159% in five years. In 1929, of the 15 million insured, nearly half a million were charged with and sent to a regional center for malingering. Of those summoned, about 65% refused to be examined and gave up their insurance, and of the 35% examined, only about 11% were found unable to work. Would America like this? Doctors prostituting their ancient and honorable profession by certifying to sickness, just to please their patients, and the people degrading themselves to dirty malingerers? It may suit us when the spirit, independence and morale of the American people have completely broken down.

In Germany the situation is quite similar; 32% of the population are insured and is compulsory in all cases when the income is \$900.00 or less. The malingering is equal to that of England, or worse. In one year, of eight million patients treated, one million three hundred thousand were sent for control examinations and of that number less than ten per cent were found to have been disabled. In one case, where fifty employees were laid off, forty-nine of them had sick certificates the next

day. It is said that the doctors' time is taken up in writing certificates, making records and addressing communications to the various committees connected with the system, that they seldom make an examination and that the profession has deteriorated to a very low level. In spite of this it is said that many of the doctors, and I suppose the public too, are quite content. The doctor is sure of his fee, makes more money because he sees fifty or a hundred patients a day and all he has to do is use his pencil.

Public health, on the other hand, as it is intended to function, is educational in its broadest sense. The people are taught to help themselves by preventing disease and if given full public support can eliminate a large part of the infectious diseases. The people can get a measure of advice and consultation without impairing their dignity or degrading and humiliating them. If all the different associations, commissions and committees were concentrated in the U. S. Public Health Service, completely organized in every county, district or city, and then given sufficient help in the office and field so that regular contact could be made with each community or school district, every requirement could be met. The children in school could be taught the value of hygiene and sanitation. The difference between reasonable and unreasonable practices, necessary and unnecessary, and that disease is a reality, a consequence of natural laws, which cannot be prayed away, rubbed away or cured by faith. There should be sufficient nurses, depending on the size of the district, and in case of the very poor, to advise whether to call a doctor or not, administer prophylactics, advise and report cases of infectious diseases. In case of the very poor, she could, and does advise the public health officer, and if not the very poor, advises them to call the family physician. The U. S. Public Health Service is now in operation in forty-five states. Massachusetts, Connecticut and Illinois, still refuse to cooperate. It must be granted that it is not operating perfectly and at the very best there is much to be desired. It also has some very powerful critics and hundreds of less powerful. Dr. Robert Hutchison, speaking before the Canadian Medical Association at Winnipeg, in 1929, claimed "that the old ignorance about the body and stolid resignation to its ills was probably the more healthy attitude and certainly a happier one than our modern

curiosity and our anxiety." He claims "that the modern pursuit of health has developed several kinds of hypochondrias. That many have developed a fear complex. That mothers have developed a vicarious hypochondriasis through over anxiety regarding the health of their children," and his final verdict is "that one need not specially concern himself about his health until he feels that something is going wrong."

Again, Dr. Gerry Morgan made a similar comment at the A. M. A., meeting at Detroit. He speaks deplorably of the long list of agencies—"medical, quasi-medical, and plain non medical." He says "in looking through this long list of agencies one is constrained to ask what has come over the people." He says "that we are told that mothers have been educated in the care of their children until they are stampeded by the multiplicity of direction." These conclusions, it seems to me are not fairly reached. People are, many times, made nervous by mercenary medical men. Designing doctors, I am sorry to say, do play upon the nerves of mothers. Certainly you will all agree that this fact is often brought to our attention—plain misinformation—emanating from some member of our own profession. People are not stampeded by demonstrated truths, nor are people stampeded by information given by Public Health Agencies. I do not believe that these two learned gentlemen, or any other fully informed person, would be willing to be uninstructed regarding the dangers of the fly or the mosquito. They would not want the people to think that the children would "out grow" their adenoids and rickets, or that "growing pains" in children should be ignored. That tuberculosis is inherited or that malaria was just the effect of bad air. They would not have people think that sickness was a curse specifically sent to plague mankind or that lightning and thunder were an expression of the wrath of an avenging God.

In fact people are not going back to those dark days of stolid resignation. They have been educated in logic to a point where they demand a reasonable explanation and the public health agencies, freed from mercenary and designing interests is the solution.

It will take statesmanship, it will take sacrifice, determination and continuous effort. In this connection I want to pay tribute to our Oklahoma Dean, Dr. LeRoy Long, for his uncompromising challenge,

for his sacrificing a cherished and honorable office rather than allow discredit to rest upon the school or students he loved. We must not expect, however, that this sacrifice will immediately be translated into a changed Oklahoma law. It may take many more sacrifices, but most of all it will require the teaching of the youth. We have been admonished to "be not weary in well doing." Much valuable time has been lost in the past by lack of system and co-operation. An instance; small pox vaccination is now 210 years old, discovered in America, and yet America is the last to be convinced. This brings to our minds another sacrifice—Drs. Boyleston and Mather enthusiastically advocated small pox vaccination and for their labors they were reviled and rebuffed. Their homes were bombed and attacked by mobs. This was really the birth of preventive medicine, but they did not live to see their sacrifices bear fruit. Another sacrifice worth mention is that of Dr. Robert Knox of England, who, in order to procure anatomical subjects for his students was driven to the extremity of accepting murdered victims from the hands of thugs. He was tried for his life and acquitted but yet he was made a living martyr. He was exiled in his own home, humiliated and disgraced. He went on the streets only in disguise and the world lost a great teacher of anatomy. At that time only executed criminals were available for dissection but the reaction emanating from this episode tipped the scales and two years later the British Parliament provided for sufficient subjects for the teaching of anatomy and thus was laid the foundation for our anatomical associations.

It is to be regretted that it took so tragic an episode as this to awaken the law makers, but the law makers, after all, are only the reflection of public opinion and public endeavors. When the public is taught the laws of health along with other natural laws, when they see that health agencies are divested of all selfishness and commercialism, they will listen to them, rather than to every quack, who has broadcasting facilities.

I am not hoping for a perfect panacea but am trusting that socialistic medicine will not be thrust upon us in such a manner that our American spirit will be forever broken down.



## DIVERTICULUM OF URINARY BLADDER

BASIL A. HAYES, M.D.  
OKLAHOMA CITY

It is my impression that this case is among the first of its kind to be operated upon in Oklahoma City. Even though there may have been others, however, it is sufficiently interesting to report, because it illustrates diagnostic errors which are commonly made.

*Case.* Tony B., aged 52, white male, in fair general condition, came to my office during the first part of November, 1927. He complained of frequent and painful urination, and stated that his urine was "dirty" and smelled bad. These symptoms had been gradually growing worse over a period of two years, during which time he had been examined and treated for varying periods by many different urologists. Treatments had consisted of prostatic massages and bladder irrigations. In each case he had been advised to have an operation for prostate trouble.

Examination at this time showed some tenderness over the right supra pubic region, urine loaded with pus and mucus, alkaline in reaction, and of putrid odor. The prostate was normal in size to digital examination. Otherwise his physical examination was negative.

Several irrigations failed to improve his condition. He was then admitted to the hospital, coming in November 28, 1927. Cystoscopic examination showed a marked deformity of the trigone, as if something was underneath, pushing it and the whole bladder floor upward and forward. Both ureteral orifices appeared normal. There was a large opening,  $\frac{1}{2}$  inch in diameter, located above and behind the left orifice, and currents of debris-laden urine could be plainly seen flowing back and forth through it. No other abnormalities were observed. The bladder was then filled with 8% sodium iodide solution and X-rayed, showing a sacculated diverticulum lying in the posterior quadrant of the pelvis. A retention catheter was placed with some difficulty owing to the deformity of the trigone. Irrigations twice a day and free drainage soon improved the quality of urine until it was deemed safe to operate. On December 7th, after consultation with Dr. John Riley, operation was undertaken and the diverticulum was removed by first dissecting it loose from surrounding

structures, then opening the bladder, inverting the sac, excising it, and closing the opening by two layers of stitches. A one inch drainage tube was left in the bladder and a soft rubber drain was placed outside, leading down to the cavity from which the sac was dissected. The patient's pulse was 72 at beginning and 110 at close, running up to 130 before he reached his room. The post operative course was perfect, fever going to 100 degrees for the first three days, after which it dropped to normal and so remained. The external drain was removed the fifth day. The bladder drain came out the tenth day, and the patient sat up on the fifteenth day. He left the hospital on the eighteenth day, and is now attending to his business. He feels fine and has gained weight.

### COMMENT

*Symptoms.* It will be noted that this patient's symptoms were the classical one of urinary tract obstruction: viz., — frequency, straining, and pyuria. Some authors describe double urination or a fresh gush of urine occurring after the patient thinks the bladder is empty. This was not observed by this patient. He did have, however, marked decomposition of the urine, giving rise to a foul ammoniacal odor. He also had tenderness only on one side of the supra pubic region, which was later explained by the fact that the bladder had been pushed over to this side by the tumor. I have not seen in the literature any reference to this diagnostic point.

*Diagnosis.* In a case of this kind, several things present themselves to the mind of the examining surgeon. *Posterior urethritis* of gonorrheal origin can be ruled out by the absence of discharge or history of recent infection, by the lack of prostatic tenderness or of positive smears.

*Intra-vesical enlargement* of the prostate is eliminated almost at once, when repeated washings of the bladder fail to make the solution return clear. This almost always indicates that there is a communicating cavity which feeds pus into the bladder. Prostate bulging can be further eliminated by bimanual examination — placing a sound in the urethra and a finger in the rectum. In this way bulging lobes can be outlined just as enlargements of the uterus or adnexae are felt by the gynecologist. *Abscess* in the bladder wall can sometimes be confusing and I have seen two cases in which the pathology was quite similar to a diverticulum. In abscess,

however, there is usually great tenderness accompanied by acute symptoms such as high fever and leukocytosis. In this, too, bladder capacity is quite diminished, while in diverticulum it is increased. *Pyonephrosis* is almost always accompanied by marked tenderness over the affected kidney, the decomposition of urine is not marked, and the patient is more acutely ill. In this, barring bladder complications, the urine is practically always acid, while in diverticulum it is nearly always alkaline. Cystocele may be diagnosed in women sometimes when the real condition is a diverticulum presenting in the vagina. Kelly and Burnham report such a case. In every instance, after clinical signs and symptoms have been studied out the diagnosis should be verified and amplified by the cystoscope and X-ray, though sometimes, as in rectal fistulae, the opening is so small that it cannot be seen even with a cystoscope.

*Causation.* Diverticula, while rare in women, do occur to the extent of 6% of reported cases. Their usual appearance, is in men from 50 to 55 years of age, though cases have been seen in patients ranging from 10 to 80. They are customarily classified into congenital and acquired; the congenital ones being those arising from a patent urachus or a ureteral bud. The majority of writers feel that while congenital defects may assist in the formation of these structures, the only real congenital ones are those arising from incomplete closure of the urachus. Dr. Young suggests that congenital obstructions of the urethra in infants and young children may account for many cases which later are hard to explain. In line with this it may be stated that my patient had a small meatus for many years, and had a meatotomy done several years ago. It seems fairly certain that some type of obstruction must be present in order to produce this trouble. Young and others have actually observed the formation of cellulæ on over-distention of the bladder. More recently Rose has worked out by means of his cystometer the exact pressures at which diverticula develop. He finds that the point of greatest strain in a distended male bladder is the border of the trigone. Here the muscle bundles are largest and the interstices widest. At this point the muscles receive their attachment, thereby lessening the elasticity of this area. He also states that there are more fibrous tissue pathways here than elsewhere. He overfilled the bladder of a normal youth

to the point of spasm and found "sharp outstanding muscle bundles bounding open-mouthed cellulæ, some surprisingly deep, when the spasm was at its greatest." This condition disappears toward the dome of the bladder and the lateral walls, as the muscle bundles there are more finely divided. These findings correspond to the cystoscopic appearance of any trabeculated bladder. In brief, Rose's conclusions are that a congenital fibrous pathway must be present through the bladder wall, which is later herniated by increased intracystic pressure. This pressure can be raised by any sort of obstructive uropathy; and after once herniating through the muscular wall the diverticulum will continue to grow even though the obstruction be removed.

*Complications.* Diverticula may cause serious complications in addition to the bladder disturbances commonly seen. Infection always supervenes and this may cause abscess, cellulitis or rupture into the peritoneal cavity. Pressure on the ureter may bring about hydronephrosis or pyonephrosis or chronic nephritis of any type. Pressure on surrounding nerves and vessels may cause pain which cannot be otherwise explained.

*Treatment.* Treatment of this condition may be for convenience divided into palliative and curative measures. Under palliative may be mentioned all those procedures which tend to relieve infection and irritation, such as bladder irrigations, urinary antiseptics and free drainage. It is easily possible to introduce antiseptic solution directly into the diverticulum by means of a ureteral catheter. Sometimes even the cystoscope itself can be pushed through the opening, the interior explored, small stones picked up, etc. These methods are good, however, only for temporary relief or to build up a patient for subsequent operation. Probably the most satisfactory way is the one used in the case; viz, a retention catheter and daily washing through it.

Under curative treatment I name the various operative methods devised for doing away with the tumor. One of the simplest of these is to enlarge the orifice so as to obliterate the partition between the two cavities, thus ensuring proper drainage. The bladder is opened and two hemostats are placed so as to clamp the walls of the bladder and diverticulum downward from the opening. This wall is then incised between the hemostats and



the edges whipped over to stop bleeding, thus removing a V-shaped portion of each wall and enlarging the diverticular opening correspondingly. The enlargement may be upward as well. Another palliative operation is to marsupialize the diverticulum to external skin and then to attempt to close the bladder opening. Still another method is that of Iousson, who sterilizes the interior of the cavity with a strong solution as iodine or formalin then closes the bladder wall tightly, trusting that the sacculation will be eventually absorbed in scar tissue. All these methods are mentioned merely for condemnation, as in my judgment they are dangerous, unsatisfactory and unsurgical. The only correct way to get rid of a diverticulum is to remove it entirely and close the opening through which it came, as was done in this case.

There are three principal ways of removing diverticula. One is to dissect them out externally and close without opening the bladder. This is very difficult to do in large diverticula though it might not be in small ones. Lower has modified this method by opening the bladder and packing the diverticulum full of gauze, thereby forming a solid tumor which can be dissected out much easier. Another way is that of Dr. Hugh Young who opens the bladder and pulls the sac inside by suction, by clamps, or by dissection, then amputates the mucous membrane and closes the opening. Again it seems to me that this would be easy in small sacs but very hard in large ones. A third method is that of Van Dorn, who locates the sac, cuts through the bladder wall until he reaches its neck, cuts this across and finishes his dissection afterwards. In my own case I combined the first two methods, i. e., I dissected out the sac externally as far as possible, then opened the bladder, inverted the diverticulum and amputated it. This was done to facilitate dissection of the extreme lower end of the mass which was beneath the trigone and lying directly upon ureters, seminal vesicles and rectum. By sticking close to the wall of the tumor none of these structures were seen and happily none were injured.

*Summary.* This is a report of a case of bladder diverticulum, which had been mistakenly treated as prostatic enlargement for several years. A brief resume of the symptoms, diagnosis points, and various methods of treatment is appended.

## THE PRESENT STATUS OF CORONARY DISEASE\*

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The study of mortality statistics over a period of years brings to light the fact that the number of deaths due to disease of the heart is continuously increasing. Among the causes of death, disease of the coronary arteries is in undisputed lead. Thus, in this chapter of American medicine is written a challenge that cannot be disregarded, and in accepting it we also accept the responsibility of thoroughly familiarizing ourselves with coronary disease, so that the many unsolved problems of today may be suitably answered tomorrow.

An idea of the magnitude of the problem is gleaned by analyzing the results of a recent survey of records of 3,354 post-mortem examinations made at The Mayo Clinic<sup>1</sup>. The patients were of all ages, and death resulted from many causes. The degree of coronary sclerosis was carefully noted and graded on the numerical basis of 0 to 4, 0 indicating complete absence of sclerosis, and 4, extremely marked sclerosis.

It is significant that in only 499 cases (14.9 per cent) were the coronary arteries found to be entirely free from sclerosis (table 1). In approximately half the cases (1,881, 56.1 per cent), there were such minor degrees of coronary sclerosis (graded 1), that they could be considered negligible so far as the patients' well being was concerned. The involvement was moderate (graded 2) in 677 cases (20.1 per cent) and unquestionably played a part in impairing cardiac efficiency in many cases. The degree of coronary sclerosis was marked (graded 3) in 254 cases (7.6 per cent) and extremely marked (graded 4), in forty-three cases (1.3 per cent).

Thus, in these 3,354 routine postmortem examinations, moderate (graded 2) to extreme (graded 3 to 4) coronary sclerosis was found in 974 cases (29 per cent). Instances of extreme involvement were disclosed as early as the third decade of life.

This study, furthermore, reveals that in general more marked degrees of coronary sclerosis occur among males than among

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females. The incidence by sex in the entire group was approximately 2 to 1, 2,139 males (64 per cent) and 1,215 females (36 per cent). Proportionately there were more females without coronary sclerosis,

ation of its practical clinical significance has added new vigor to the investigation of the anatomy, physiology, pathology and clinical aspects of the coronary circulation.

TABLE 1  
DEGREE AND INCIDENCE OF CORONARY SCLEROSIS IN 3354 NECROPSIES

Age Groups	Cases	Per cent	Cases				
			Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
0-9	249	7.5	215	34			
10-19	131	3.9	64	67			
20-29	216	6.4	49	164		3	
30-39	417	12.5	54	327	32	3	1
40-49	659	19.6	67	451	122	19	
50-59	776	23.1	47	458	203	56	12
60-69	655	19.5	3	307	228	106	11
70-79	218	6.5		67	83	53	15
80-89	31	0.9		6	9	12	4
90-99	2	0.1				2	
Total	3354	100.0	499	1881	677	254	43
Per cent			14.9	56.1	20.1	7.6	1.3
974-29.0 per cent							

19.8 per cent, as opposed to the incidence of 12.1 per cent of males (table 2). Among 734 males (34.3 per cent of 2,139) the degree of coronary sclerosis ranged from 2 to 4, whereas this range of distribution occurred among 240 females (19.8 per cent of 1,215).

During the last two decades knowledge of coronary disease has been greatly broadened, and the more general appreci-

#### ANATOMIC DATA

Fifty-one years have elapsed since Conheim expressed the view that the coronary arteries are end arteries. This postulate was generally accepted by the medical profession until the studies of Spalteholz in 1906, and of Hirsch in 1907, proved the contrary.

Gross, in 1921, by means of roentgeno-

TABLE 2  
DEGREE AND INCIDENCE OF CORONARY SCLEROSIS OCCURRING IN 3354 NECROPSIES ACCORDING TO SEX

Age Groups	Males					Females				
	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
0-9	110	21				105	13			
10-19	30	34				34	33			
20-29	26	101				23	63		3	
30-39	32	205	25	3	1	22	122	7		
40-49	36	264	92	13		31	187	30	6	
50-59	23	267	136	46	10	24	191	67	10	2
60-69	2	196	165	84	9	1	111	63	22	2
70-79		54	70	49	14		13	13	4	1
80-89		4	7	6	2		2	2	6	2
90-99				2						
Total	259	1146	495	203	36	240	735	182	51	7
Per cent	12.1	53.6	23.1	9.5	1.7	19.8	60.4	15.0	4.2	0.6
734-34.3 per cent					240-19.8 per cent					



grams of specimens injected with opaque material, clearly demonstrated the extensive distribution of the arterial coronary circulation, namely, the overlapping, distribution of the right and the left coronary arteries, and the arterial supply of the valves and subendocardial structures.

Spalteholz, in 1924, published his monograph on the coronary circulation, which summarized knowledge of the subject up to that time. Oberhelman and Le Count in the same year commented on the variability of the degree and extent of anastomosis of the coronary arteries, present under normal conditions but even more marked in the presence of disease.

Probably the clearest exposition of the anatomy of the coronary circulation is found in Whitten's<sup>22 26 27</sup> celloidin — corrosion specimens made at The Mayo Clinic. The material injected was colored to facilitate distinguishing the structures. The celloidin injected into the right coronary artery was blue, that injected into the left coronary artery was red, and that injected into the coronary veins and into the chambers of the heart was white. I shall not attempt to consider Whitten's work in detail, but only the more important and original facts that were disclosed.

Whitten demonstrated that the right coronary artery supplies the major portion of the posterior surface of the left ventricle, and a portion of the interventricular septum. The right coronary artery, very soon after its origin from the aorta, enters the coronary sulcus, the groove between the right auricle and the right ventricle, and continues to the posterior surface of the heart. Smaller branches are given off at intervals as the artery passes around the right surface of the heart, their general direction being toward the apex. Where the right coronary artery passes the posterior interventricular sulcus a large branch is given off, that is, the posterior descending branch, which continues downward to about two-thirds to three-fourths the distance from the coronary sulcus to the apex. This branch supplies the posterior third of the interventricular septum. From the origin of the posterior descending branch, the right coronary artery crosses the interventricular sulcus to reach the posterior surface of the left ventricle, where it divides into two or three branches which arch sharply and pass downward three-fifths the distance toward the apex. These branches do

not extend beyond the left margin of the heart.

Certain variations in the distribution of the right coronary artery occur and these departures should be thoroughly appreciated. At times, the posterior descending branch and the other branches of the right coronary artery extend to the apex, and occasionally slightly beyond; the right coronary artery, in such instances, supplies the whole posterior surface of the left ventricle, part or all of the apex, and the posterior third of the interventricular septum.

In some cases, the right coronary artery does not extend to the posterior interventricular sulcus, and therefore does not supply the posterior surface of the left ventricle, in which event, the whole left ventricle and the entire interventricular septum is nourished by the left coronary artery. The part played by the posterior descending branch of the right coronary artery is then assumed by the circumflex branch of the left coronary artery.

The anatomy relative to the left coronary artery is so well known that further comment here would be irrelevant.

Whitten's specimens also show fundamental differences in the method of muscular penetration of branches of the right and left coronary arteries. The branches of the right coronary artery that supply the right ventricle spread out over that chamber as gradually angulating tributaries. The branches of the left coronary artery, and also those of the right coronary artery that supply the left ventricle are not issued in this gradual manner, but penetrate through the myocardium at right angles. Few secondary branches are given off until the region of the endocardium is reached, where sharp angulation again occurs, and the vessels end in an abundant network of fine arterioles.

It is thus evident that the left coronary artery is firmly fixed, as are also those branches of the right coronary artery which supply the left ventricle. This unquestionably subjects the circulation of the left ventricle to greater stress than that occurring in the more mobile vessels of the right ventricle.

Thus are portrayed the complicated channels of nutrition as they occur in the average normal heart, and as they occur in variations that still include the range of normal. A composite view of the circu-

lation of the heart, as gleaned from these specimens, so clearly depicting the enormous extent and distribution of the vascular channels, furthers our appreciation of the remarkable and intricate structure of the human heart.

The capillary bed of the heart has been studied by Wearn<sup>23</sup>, who perfused the beating heart with a suspension of Berlin blue. Sections of muscle were then examined microscopically and the capillaries counted. His study indicated that there was a very extensive capillary bed, an average of one capillary for every muscle fiber being estimated for the ventricular wall and papillary muscles, whereas fewer were demonstrable in the auricular muscle and the specialized conducting system. Wearn estimated that the number of capillaries in the ventricular and papillary muscles was about twice that found by Krogh in skeletal muscle.

The Thebesian vessels, another component of the circulation of the heart, have received considerable renewed interest in the last few years. These connecting channels were first described by Vieussens, in 1706, and again by Thebesius, a few years later. They are small, venous channels connecting the coronary arteries with the chambers of the heart. Wearn<sup>24</sup>, in 1928, by perfusion experiments, demonstrated this additional circulation, and showed connections between the larger coronary veins and the Thebesian veins. He stated that under certain circumstances 90 per cent of the arterial flow of blood may escape by way of the Thebesian vessels, and that occasionally this circulatory system may adequately nourish the heart muscle. It is probable that in some cases of coronary occlusion, cardiac nutrition is favored by the augmented function of the Thebesian circulation. Grant and Viko, a year later, minutely described the anatomic variations of the Thebesian vessels.

#### PHYSIOLOGIC DATA

Newer concepts regarding the physiology of the coronary circulation are found in the experimental studies of Anrep and Segall. They investigated the mechanism of peripheral and nervous regulation in the denervated and the innervated heart-lung preparation. In the denervated preparation, they found the arterial blood pressure to be the only mechanical factor which determined the coronary circulation. Changes in cardiac rate, and in contraction amplitude, had no effect on the

flow of blood per minute through the coronary vessels. In the innervated heart-lung preparation, the flow of coronary blood was determined by the minute output of the heart. An increase in cardiac output was accompanied by an increased coronary flow, and was believed to be a reflex mechanism, disappearing after section of both vagus nerves.

#### CLINICAL DATA

Owing to the actual increase of coronary disease, one is forced to analyze present day conditions in the attempt to find some suitable reason for the increase. The major obstacle in this connection is the fact that knowledge of the causes of arteriosclerosis is still speculative. However, the impression that some effect has followed the obvious changes that have taken place in conditions of living, and in the manner of working and playing, cannot be avoided. This age is fraught with stress, excitement, worries, anxieties, and calamities, and the circulatory system must carry the brunt of these artificially created evils. The part played by heredity cannot be overlooked, although few reliable data pertinent to this factor are available. One cannot but speculate on the effect of poor alcoholic beverages on the arterial system, and in spite of the statistics circulated at this time, attempting to prove that black is white, we, as physicians, know that prohibition has not been prohibitive, and that the consumption of raw and synthetic alcoholic beverages is on the increase, particularly among the younger part of the population. This is a serious medical problem and should solicit the unbiased consideration even of the idealist.

*Data on, and influences from, 1,000 cases of coronary disease in which the anginal syndrome occurred.* The anginal syndrome occurs more frequently among men than among women; the incidence in a series of 1,000 cases of coronary disease seen at The Mayo Clinic, was 84 per cent males and 16 per cent females. Occupation and its possible effect on the production of the anginal syndrome was investigated, in these cases. The occupations were divided into three groups as follows: laborious, semi-laborious, and sedentary. In only 213 cases (21.3 per cent) could the occupations be listed as laborious (table 3). Farming outranked all other occupations (161 cases) which probably to a considerable degree is influenced by the fact



TABLE 3

OCCUPATIONAL DATA IN 1000 CASES OF ANGINA PECTORIS

	Cases	Per cent		Cases	Per cent
Laborious Occupations	213	21.3	Sedentary Occupations	450	45.0
Farmer	161		Merchant	118	
Mechanic	15		Physician	57	
Carpenter	9		Executive	42	
Laborer	8		Clerk	31	
Brick mason	4		Clergyman	29	
Plumber	4		Financier	21	
Truckster	2		Real estate agent	19	
Miner	2		Insurance agent	18	
Tinsmith	2		Attorney	18	
Blacksmith	2		Dentist	12	
Laundress	2		Manufacturer	10	
Janitor	1		Teacher	9	
Maid	1		Barber	8	
			Tailor	6	
Semi-laborious Occupations	294	29.4	Editor	5	
Housewife	137		Restaurateur	4	
Salesman	42		Hotel keeper	4	
Engineer	26		Telegrapher	4	
Contractor	15		Commissioner	3	
Foreman	11		Actor	3	
Trainman	8		Junk dealer	3	
Police officer	6		Mortician	3	
Veterinarian	5		Postmaster	3	
Nurse	4		Steward	2	
Garage man	4		Photographer	2	
Mail carrier	4		Salvation Army worker	2	
Cook	4		Telephone operator	2	
Painter	3		Watchmaker	2	
Prospector	3		Auctioneer	1	
Stockbuyer	3		Musician	1	
Baker	3		Hostess	1	
Forester	2		Horticulturalist	1	
Oil station attendant	2		Optician	1	
Trapper	2		Librarian	1	
Soldier	1		Author	1	
Shoemaker	1		Bookkeeper	1	
Hostler	1		Chemist	1	
Ferryman	1		Congressman	1	
Upholsterer	1				
Geologist	1				
Collector	1				
Linotype operator	1				
Boatman	1				
Cateress	1				
			Occupation not determined	43	4.3

that a large part of the clientele of the clinic is composed of farmers.

Patients who had semi-laborious occupations ranked next, with 294 cases (29.4 per cent); the largest number of patients of any occupation among the 294 was 137 housewives; I have listed these conservatively as having semi-laborious occupations. The largest number of patients followed sedentary occupations, 450 (45 per cent). Merchants were first in order, and then physicians. Coronary disease has frequently been referred to as a disease of physicians and perhaps with some justification.

These statistics seem to indicate that

the stresses and strains of business and professional life play a more important part in coronary disease than do the stresses and strain of the farmer or laborer, who perhaps, owing to temperamental and environmental differences, reacts in a manner less detrimental to his arteries.

Arteriosclerosis affecting the coronary arteries, often progressing to the stage of marked calcification, impairs cardiac function according to the extent and degree of involvement, and according to the rate at which the occlusive process develops.

The concept at one time was prevalent that coronary disease, when sufficiently

marked to impair cardiac nutrition, was always evidenced by the syndrome of angina pectoris. Although the anginal syndrome is the outstanding expression of coronary disease, it is by no means the only manifestation. There are numerous instances in which interference with cardiac nutrition is manifested by dyspnea occurring with undue effort, or occurring as a paroxysmal disorder when the patient is at rest. At times, the syndrome of congestive heart failure occurs, especially in those cases complicated by cardiac hypertrophy consequent to hypertension, or to failure following cardiac infarction.

The arterial lesions of coronary disease are almost without exception limited to the larger arteries. Unlike arterial lesions in other parts of the body, the coronary arterioles, with the exception of thrombosis, remain remarkably free of involvement.

The atherosclerotic process may involve both the right and left coronary artery simultaneously, yet frequently only one secondary branch of either artery is involved, the remaining vascular structures being found to be quite normal. The process may result in complete loss of arterial elasticity with, however, little impingement of the lumen of the vessel, resulting in the so-called patent sclerosis. The general tendency, however, is for the production of vascular occlusion, the lesion frequently progressing slowly and often being quite well advanced before the onset of characteristic symptoms. In other cases, localized occluding lesions of the artery are present, at times only 0.5 cm. in extent, occurring singly, with involvement of only one branch and again being present in numbers. These lesions are frequently referred to as the plaque type of sclerosis. I have observed cases in which there was only one plaque, the remaining portions of the coronary tree being quite normal, and death was due to obstruction of only a fraction of an inch of a single coronary branch.

Syphilis of the coronary arteries seldom occurs; in records of necropsy studied at The Mayo Clinic, such a lesion was not mentioned. One or both coronary ostia are frequently markedly occluded by the scarring and deformity consequent to syphilitic aortitis, but in these cases an abrupt line of demarcation exists, the coronary arteries themselves remaining uninvolved.

The characteristic myocardial lesion resulting from gradual narrowing of the

coronary circulation is myofibrosis. This may be confined to the region supplied by a certain artery, or it may be extensive. This pathologic change was, until relatively recently, identified as chronic myocarditis, implying an infectious or toxic lesion, and clearly confusing the issue, a fact which unquestionably greatly retarded progress in establishing the relationship of impaired cardiac nutrition and involvement of the myocardium.

The characteristics of the anginal syndrome are so well known that I shall not dwell on them, but I shall attempt to stress the atypical and often subtle manifestations that frequently lead to diagnostic error.

It must always be borne in mind that the site of the origin of pain, and the distribution of pain in angina pectoris may be variable. It is not unusual for the patient to experience pain in the upper part of the abdomen, in the epigastrium, or in either subcostal area, thereby causing attention to be directed to a possible lesion in the upper part of the abdomen. This is particularly true in cases of coronary thrombosis in which the diagnosis of gallstones, ruptured peptic ulcer, or acute pancreatitis, is frequently rendered. Also, acute indigestion and ptomaine poisoning may be considered causes of sudden death.

A fact not to be forgotten is that the ordinary anginal attack is of relatively short duration, rarely lasting fifteen minutes, and invariably related to cardiac overload, such as exertion, emotional display, or overeating. The attack of longer duration, particularly when it lasts an hour or more, is virtually always the result of coronary thrombosis.

The objective examination of the heart, in the presence of the anginal syndrome, often fails to reveal conclusive data, for cardiac enlargement may be absent, rhythm may be normal and murmurs may not be detectable. A careful study of the heart tones, however, frequently offers a clue that the heart is not normal, the tones being somewhat muffled, and lacking the well defined character of those of the normally functioning heart.

Numerous cases, however, are encountered in which the heart is definitely enlarged and objective evidence of disease is obvious. In such cases particularly, associated conditions are found that in themselves are capable of producing hypertrophy and failure. I refer especially to



hypertension, and in this series of 1,000 cases well established hypertension occurred in 332 (33.2 per cent). It is probable that in other cases blood pressure had been elevated previously and then normal or low pressure had been spontaneously restored, leaving a hypertrophied heart as a relic of the former hypertension.

Healed cardiac infarction, especially if multiple infarctions have occurred, is also capable of producing cardiac hypertrophy, as shown by the studies of Smith and Bartels. Healed cardiac infarction occurred in 109 cases (10.9 per cent), in the series of 1,000 cases before mentioned.

The electrocardiogram is an important diagnostic adjunct in the diagnosis of disease of the coronary arteries. It is significant that in only 338 cases (33.8 per cent) in this series of 1,000 cases were electrocardiograms essentially negative, and thus clearly showing the value of this method of examination (table 4).

and III, in twenty-five cases. Diphasic T waves in the leads mentioned occurred in 187 cases, bringing the total of cases in which there were anomalies of the T wave to 525 (52.5 per cent of 1,000). In seventy-four of these 525 cases (14.1 per cent) cardiac infarction had healed.

Disturbances in cardiac conduction occurred in eighty-two cases (8.2 per cent of 1,000). Complete bundle-branch block occurred in seventeen cases, incomplete bundle-branch block in fifty-seven cases, delayed auricular ventricular conduction in seven cases, and complete heart block in only one case. Major disturbances in rhythm, comprising auricular fibrillation and flutter, occurred in only twenty-eight of the 1,000 cases (2.8 per cent). In twenty-five cases there was auricular fibrillation, and in only three was flutter recorded.

Lengthened Q waves in lead III, according to the criteria of Pardee<sup>15</sup>, occurred in 135 of the 1,000 cases (13.5 per cent). In

TABLE 4

ELECTROCARDIOGRAPHIC FINDINGS IN 1000 CASES OF ANGINA PECTORIS

	Cases	Per cent*
T wave changes	525	52.5
Negativity in lead I	171	
Negativity in leads I and II	62	
Negativity in leads II and III	80	
Negativity in leads I, II and III	25	
Diphasic T waves in significant leads**	187	
Conduction disturbances	82	8.2
Complete bundle branch block	17	
Incomplete bundle branch block	57	
Delayed A-V conduction***	7	
Complete heart block	1	
Major disturbances of rhythm	28	2.8
Auricular fibrillation	25	
Auricular flutter	3	
Lengthened Q wave lead III	135	13.5
R-T segment changes:		
Depression, elevation or contour changes	266	26.6
Normal electrocardiogram	338	33.8

\*The percentages do not total to 100 owing to the fact that the abnormalities frequently occurred in combination in the same case.

\*\*Comprising leads I, I and II, II and III and I, II and III.

\*\*\*The delayed conduction in these cases was not abolished by the subcutaneous injection of atropin.

T wave negativity occurred with greatest frequency, being present in 338 of the 1,000 cases (33.8 per cent). The occurrence of this abnormality according to leads was as follows: Lead I in 171 cases; leads I and II, in sixty-two cases; leads II and III, in eighty cases, and leads I, II and III, in twenty-five cases, and in only three was flutter recorded.

Changes in the R-T segment, namely, depression, elevation, and changes in con-

cent of which the electrocardiograms revealed large Q waves in lead III, I<sup>11</sup> 12 found the anginal syndrome to occur in 25.3 per cent and in 66 per cent it was the only graphic abnormality present.

tour occurred in 266 of the 1000 cases (26.6 per cent). Detailed consideration of these alterations, and the means of distinguishing differences in contour will not be undertaken here, but will form the basis of another study.

It is thus evident that electrocardiography occupies a very important place in the diagnosis of coronary disease and its application as a routine in the appraisal of cases of actual or suspected disease of the heart is warranted.

*Coronary Thrombosis.* The diagnosis of coronary thrombosis, with resulting infarction of the myocardium, has been converted from an elusive problem, rarely solved by the clinician, to a clear-cut diagnosis now made with unerring accuracy by a host of physicians. This metamorphosis has occurred over a relatively short span of years, probably the earliest accurate clinical description of the condition in this country being that of Herrick<sup>9</sup>, in 1912. A hitherto uncommon condition has become a common one. It is frequently stated that the increase in coronary thrombosis is only apparent, due to greater diagnostic accuracy, but records of necropsy refute such statements. Little doubt exists that the disease is on the increase. In a recent study of 1,000 consecutive postmortem examinations, of unselected subjects, conducted at The Mayo Clinic, Barnes and Ball found reports of myocardial infarction in forty-nine cases (4.9 per cent),

Although coronary thrombosis stands

out as a clinical entity, it is nevertheless a component of coronary disease in general, for it does not occur when the coronary arteries are normal. A small mural thrombus is formed, usually on an area of intimal roughening in one of the larger coronary branches. It gradually increases in size, and is either detached and carried on by the flow of blood completely to occlude a branch, as it becomes incarcerated by the diminishing size of the vessel, or it completely occludes the vessel at its site of origin. This sudden obstruction of circulation results in infarction of the myocardium in a region corresponding to the artery occluded. Barnes and Ball studied the site of infarction, and found that in all of their forty-nine cases the infarcts occurred in the left ventricle. Incidentally, the material obtained at necropsy in The Mayo Clinic, up to the present time, contains no instance of demonstrable infarction of the right ventricle. Barnes and Ball found the anterior portion of the left ventricle, and the apex, to be the seat of infarction in twenty-eight cases (table 5). The median portion of the left ventricle was the site of infarction in eight cases, whereas there was infarction of the posterior basal portion of the left ventricle in twenty-four cases. Diffuse infarction beneath the endocardium occurred in three cases.

It is well to recall, at this point, Whitten's demonstration of the right coronary artery as the vessel supplying the posterior basal portion of the left ventricle in the majority of cases. It thus becomes

TABLE 5  
SITE OF INFARCTION AND OCCLUSION IN 49 CASES\*

	Cases**
Site of infarction in left ventricle	
Anterior portion and apex	28
Median ventricular portion	8
Posterior basal portion	24
Diffusely beneath endocardium	3
Artery demonstrated to be occluded	
Left coronary	
Anterior descending branch	18
Circumflex branch	7
Right coronary	9
Artery to region of infarction when occlusion not demonstrated	
Left coronary	
Anterior descending branch	10
Circumflex branch	10
Right coronary	11

\*Modified table from Barnes and Ball.

\*\*Two infarcts were present in 12 cases and three in 2 cases.



evident that occlusion of the right coronary artery does not result in infarction of the right ventricle, as previously believed, but of the left ventricle in its posterior basal portion. In the customary opening of the heart as practiced by pathologists, this important region may be overlooked, a fact which undoubtedly has been the basis for failure to demonstrate numerous infarcts.

The clinical syndrome of coronary thrombosis is characterized by severe pain, usually beneath the sternum, but at times in the epigastrium with or without radiation into one or both arms. The pain is persistent, lasting from several hours to one or two days, and in several cases of multiple infarction, it has lasted from sixty to ninety hours. The patient frequently appears to be in shock, the body is covered by cold perspiration, there is a rapid fall in blood pressure, and he fears impending dissolution. In a relatively short time following the onset of the attack, the anxious facies of the patient becomes accentuated by ashen pallor. Nausea and at times vomiting complicate the clinical picture. Occasionally cases are observed in which there is no pain, and here dyspnea and the other symptoms of infarction are evident. The heart tones are frequently rapid and lack definition, and at times their regular sequence is interrupted by premature contractions. Within four to twenty-four hours a pericardial friction rub may be audible, the result of the inflammatory reaction surrounding the region of infarction, involving the visceral and subsequently the contiguous parietal pericardium. This is particularly true when the infarct is situated anteriorly.

Fever always occurs, and ranges from 99.6° to 102°F. or higher. It frequently occurs within a few hours after the onset of the attack and usually attains its maximum on the second or the third day. The number of leukocytes ranges from 11,000 to 20,000 in each cubic millimeter of blood, or higher, usually becomes evident within twelve to twenty-four hours, and lasts for a variable period of time, depending on the progress of the case.

Death may occur in the first attack, sometimes immediately, or not for several days to a week or two. There are many cases, however, in which patients make a fairly complete recovery and live for many years. A group of such cases, including some of recurrent infarction, has been reported by Willius and Barnes and by

others. The discovery of healed infarcts in the course of postmortem examinations performed as a routine adds further proof to these observations.

The mechanism of death in cardiac infarction is of importance, and warrants brief comment.

In cases of sudden death, which occurs particularly if a large branch is occluded, or if the usual anatomic distribution of the coronary arteries is unusual and a considerable portion of the ventricle is supplied by the artery occluded, it is probable that cardiac asystole occurs abruptly, perhaps preceded by ventricular fibrillation. If death does not occur immediately, it may supervene rather unexpectedly when the patient is believed to be recovering. Under these circumstances, one of two complicating conditions occurs.

Frequently the infarct involves the thickness of the myocardium, and the inflammatory reaction extends to and involves the contiguous endocardium, resulting in formation of a mural thrombus. Subsequently, a portion of this thrombus may become detached, with resulting fatal embolism, the usual destination being a cerebral artery, a mesenteric artery, or an artery of the lower extremity.

When progressive necrosis of the infarct occurs, spontaneous rupture of the heart results, and numerous instances of this catastrophe are now on record. If extensive infarction of the interventricular septum occurs, complete heart block with convulsive syncope may result in death within a few hours after the onset of the attack<sup>20</sup>.

Death may occur several months or years later, from progressive heart failure, and in many of these cases there are areas of marked ventricular thinning and bulging at the site of the old infarct, the so-called ventricular aneurysms.

Much important information is available to the clinician by daily observation of the leukocyte count. As I have mentioned, leukocytes usually number 11,000 or more within the first twelve hours. The proportion of polymorphonuclear leukocytes is 80 to 90 per cent. When the progress of the case is favorable, the leukocyte count becomes restored to normal within five to seven days. However, if the number of leukocytes does not return to normal, or shows a progressive tendency to increase, or if it increases after a pre-

liminary drop, the clinician may be certain that one of two complications is imminent. There is either a sizable mural thrombus that may result in fatal embolism, or progressive myocardial necrosis that may result in cardiac rupture. I believe it is safe to assert that a careful daily record of the leukocyte count in coronary thrombosis is the most reliable prognostic guide.

In a recent investigation at The Mayo Clinic, Patmos studied the healing of myocardial infarcts of patients who had died at varying periods following coronary occlusion. This work is of great practical importance, for it answers the question of how long the patient with coronary thrombosis should be kept at complete rest in bed. His study permitted him to divide the healing of infarcts into four stages:

1. When death occurred within two to four hours after occlusion, focal regions of degeneration were interspersed between muscle of normal appearance. There was slight interstitial edema and congestion of blood vessels. In the muscle bundles regions of early necrosis, cloudiness, pyknosis of nuclei, and diminution of the transverse striations were demonstrable.

2. In the infarcts between four hours and five days old, there was complete necrosis and acute inflammation. The necrotic regions were found to coalesce, and numerous polymorphonuclear leukocytes were discernible around the edges. A few lymphocytes, mononuclear leukocytes, and extravasated erythrocytes were visible. Polymorphonuclear leukocytes first appeared within the adventitia of capillaries at the end of four hours, and gradually increased in number during the succeeding four days. In infarcts which were two days old, phagocytosis was well under way. Increasing amounts of fat were apparent in the necrotic and degenerated muscle cells, and karyorrhexis and karyolysis of nuclei of primary muscle bundles were pronounced. There were cellular changes ranging from hyaline to granular degeneration. Fibroblasts were occasionally seen at the margins of necrotic portions of infarcts thirty-six hours old but were not numerous unless they were five days old.

3. Infarcts from five to twenty-two days old, and even more, gave evidence of rapid disappearance of the inflammatory reaction, and gradual replacement by connective tissue. Fibroblasts were arranged at right angles to the newly formed blood vessels and if nine days had elapsed since

the infarction they were prominent and the necrotic portions were greatly diminished. After twenty-two days, regions of diffuse fibrosis were present.

4. In infarcts that were four to six months' old, condensation and contraction were present, and represented complete healing.

My observations lead me to conclude that at least five to six weeks of complete rest is advisable for patients convalescing from coronary thrombosis, and that guarded activity is indicated for at least six months or longer, according to the individual case.

Electrocardiography is of untold value in coronary thrombosis, not only as supplementary evidence of its existence, but in localizing the infarct; frequently it is the only means of identifying multiple infarctions. If death occurs within a few hours following onset of the attack, the electrocardiogram may fail to reveal characteristic alterations, although in one case changes were observed within half an hour.

The first combined clinical and electrocardiographic report of coronary thrombosis in this country is credited to Herrick<sup>10</sup>. Pardee<sup>11</sup> in 1925, described changes in the T wave, which he associated with sudden coronary occlusion. The same year, I reported two cases<sup>28, 29</sup> of coronary thrombosis, with detailed electrocardiographic observation, and commented on the importance of this method of examination in diagnosis of the condition. Parkinson and Bedford in 1928, called attention to alterations in the level of the R-T segment of the electrocardiogram and changes in its contour occurring constantly in cases of myocardial infarction. Barnes and Whitten and later Barnes pointed out the value of the electrocardiogram in permitting accurate localization of the region of infarction. This work fundamentally hinges on the anatomic studies of Whitten which have been mentioned.

The left coronary artery supplies the anterior portion and apex of the heart, and the median portion of the left ventricle, and infarcts in these regions can be, by graphic methods distinguished from those occurring in the posterior basal portion of the left ventricle, the region supplied by the right coronary artery.

When the left coronary artery is obstructed and the corresponding portions of the myocardium become the site of infarc-



tion, the earliest electrocardiographic changes consist of elevation of the R-T segment in lead I and also usually in lead II, and corresponding depression of the R-T segment in lead III.

The first and third leads are essentially mirror images of each other. These changes are apparent within twelve to twenty-four hours (table 6). The changes

to change, reflecting the subsequent region of destruction.

*Prognosis in coronary disease.* The anginal syndrome and coronary thrombosis represent the most serious forms of coronary disease. The early manifestations of the anginal syndrome are too often considered insignificant by the physician, because the objective examination of the

TABLE 6

SITE OF INFARCTION AS RELATED TO THE ARTERY OCCLUDED: ELECTRO-CARDIOGRAPHIC CHANGES

Left coronary artery	Right coronary artery
Anterior portion and apex	Posterior basal portion of the left ventricle and the posterior third of the interventricular septum.
1. Elevated R-T segment in lead I and usually in lead II; depressed R-T segment in lead III.	1. Depressed R-T segment in lead I; elevated R-T segment in leads II and III.
2. These changes become more apparent and the T waves in lead I and usually in lead II become negative.	2. The above changes become more marked and the T waves in leads II and III become negative.
3. Further exaggeration of the R-T segment changes with deep negativity of the T waves in lead I and usually in lead II; the positive T wave in lead III tends to become high and abrupt; changes in contour of the T waves occur.	3. Further exaggeration of the R-T segment changes with deep negativity of the T waves in leads II and III and abrupt high positive T waves in lead I; marked alteration in T wave contour.

in the segments then become more pronounced, and the T waves in lead I, and frequently also in lead II, become negative. A stage is usually observed when they are diphasic.

From the fifth to the tenth day the changes in segments become more marked, the negative T waves become very deep, and the positive T wave in lead III, becomes high and very abrupt, and the characteristic T waves described by Pardee<sup>4</sup> are evident.

When the right coronary artery becomes occluded and the posterior basal portion of the left ventricle becomes the site of infarction, essentially opposite electrocardiographic changes ensue, leads II and III becoming the seat of T wave negativity.

In event of infarction of both the anterior and the posterior surfaces of the left ventricle, the electrocardiogram assumes the characteristics of the first part to be the site of infarction, and then tends

heart often reveals little, if any, evidence of disease, and therefore the patient is permitted to carry on his usual work. The onset of retrosternal pain or discomfort, and the occurrence of nocturnal dyspnea, particularly in middle life or later, should always be considered an ominous sign until positively proved otherwise. The fact that the origin and distribution of pain are often atypical requires knowledge of these possibilities in evaluating the condition of a patient whose complaints are not typical. Hay commented as follows:

"Prognosis is often at fault because the significance of the slight and early manifestations is misinterpreted. These minor anginas have certain characteristics which should enable them to be recognized for what they are, symptoms often unobtrusive, yet significant, and only yielding up their secret to careful cross-examination. They may be compared to a gesture, slight but ominous, and full of menace."

Coronary thrombosis is one of the most serious catastrophies in cardiology, and

it may occur in any case of coronary disease, even though the vascular changes are minimal. The immediate mortality is exceedingly high; probably half of the patients die at once, or within a relatively short time. Those who survive the immediate attack may live for several months to several years, death frequently resulting from progressive myocardial failure or recurrent cardiac infarction.

*Treatment.* Treatment of coronary disease consists to a large extent, of establishment of an individualized program of life. Every effort should be made to reduce the patient's plane of activities to a level at which seizures are avoided. This, of course is not always possible, and supplementary measures are necessary. The patient must be instructed in detail regarding his self-discipline, for in order completely to alter living and working methods, a complete change in his philosophy of life must be accomplished. We cannot expect the patient to accomplish this himself, and it is here that the interested and humane effort, and patience of the physician is demanded. The details of this relationship between the physician and the patient cannot be elaborated at this time but it is a subject of extreme importance.

It is frequently advisable to equip the patient with nitrites in order to enable prompt relief from pain, but it is always necessary to inform him definitely that the drug is not one to be used in a manner that will permit him temporarily to overstep his limited threshold. Employment of nitrites in such a manner is extremely hazardous and is to be condemned.

In recent years, the use of the xanthine derivatives has given beneficial results in many cases, modifying the frequency and severity of the seizures, and in some cases causing their complete cessation. The preparations of this sort that most commonly are used are theobromine, theobromine sodiosalicylate and ethylenediammetheophyllin (metaphyllin). They may be administered for long periods of time, and it is rare that symptoms of intolerance supervene. The use of digitalis is indicated only in the presence of congestive heart failure.

The patient's diet should be modified to meet the requirements of the individual case, and above all, overeating and rapid eating should be prohibited. It is advis-

able for the patient to rest after a meal. Reduction of protein in the diet seems advisable, and the degree of reduction again, must be individualized. The avoidance of foods from which gas is generated, likewise should be reduced or prohibited, as the case may be.

Not infrequently, patients have severe anginal attacks during meals or soon thereafter, and under such circumstances, the rather frequent ingestion of small meals is helpful.

The ardor that prevailed a few years ago regarding sympathectomy in cases of anginal syndrome has gradually waned, and today relatively few procedures of this nature are carried out. The relatively high mortality attending the operation, and the uncertainty regarding relief of pain probably have done more than anything else to discourage the procedure. A fundamental objection to the method was its purely palliative nature; it in no way altered the pathologic processes of the disease, and the fact that when successful, it eliminated pain, removed the patient's only warning sign. I will not dispute the fact that under certain circumstances, sympathectomy may have a definite indication. I can visualize the patient, receiving no benefit from a thoroughly tried and ideally instituted medical regimen who continues to have severe attacks with great frequency, and who accepts sympathectomy as a final effort for relief. However, to revert back to the optimism concerning the method, that prevailed in 1926, would be a misfortune,

Paravertebral injection of nerves is a method of considerable value in a group of carefully selected cases. Its chief indications lie in cases in which medical treatment has failed to give relief, and in which risk of any procedure is not prohibitive.

The first five thoracic nerve roots on the left side, and at times on the right, are subjected to injections of procaine, followed by absolute alcohol. Complete relief may not be permanent, but the procedure can be repeated if necessary. Cases have been noted in which relief of pain has been almost immediately supplanted by paroxysmal dyspnea.

In this consideration of coronary disease I have attempted to bring out the newer concepts regarding it, and have at-



tempted to correlate the clinical features with the pathologic changes underlying the disease as they are at this time.

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## REACTION TIME OF NORMAL PUPIL

H. S. Gradle and Walter Ackerman, Chicago (Journal A. M. A., Oct. 15, 1932), report that in normal young blue-eyed persons, the pupil reacts in accordance with the following terms: (a) On illuminating the eye, there is a latent period of 0.1875 second. (b) This is followed by a primary contraction of the pupil lasting 0.4365 second at the rate of 5.48 mm. per second. (c) Then there comes a secondary contraction of the pupil lasting 0.3125 second at the rate of 1.34 mm. per second. (d) When the illumination is removed, the pupil starts to dilate at the rate of 0.95 mm. per second.

## CHRONIC GASTRIC ULCER IN CHILDREN

J. C. Foshee, Grand Rapids, Mich. (Journal A. M. A., Oct. 15, 1932), points out that chronic gastric ulcer in children is more common than has been supposed, although it still remains noteworthy for its rarity of recognition. Undoubtedly, in the future, more cases will be recognized and reported if these children are given the same careful examination and investigation that is given to adults. The cause is as indefinite as it is in adults. Infection in children plays the most important role. The ulcer constitution in some cases stands out paramount, for in them it begins with their early infancy, before infection has become a factor. Influencing factors, such as alcohol, tobacco, overwork and nervous tension, play no part in the cause of ulcers in children as they may in adults. The pathologic changes are quite extensive and as massive as those found in adults. Penetration and perforation are almost the rule, with the invasion of the adjacent organs. Symptoms that are quite pronounced and typical of ulcer may go a considerable time unrecognized until the patient suffers hemorrhage or perforation. Fourteen of nineteen patients with this condition recovered, thirteen of whom were operated on. One patient recovered under medical management. One of the five patients who died was operated on, but the case was not recognized, since it was mistaken for a peritonitis from acute appendicitis, but autopsy revealed a perforative ulcer on the lesser curvature and a normal appendix. The four remaining cases were discovered at autopsy. Posterior gastro-enterostomy was performed in twelve cases and a partial gastric resection with anterior anastomosis in one; all were successful, and those patients have not shown recurrences of either gastric or marginal ulcers.

## TUMORS THAT ORIGINATE FROM ENDOCRINE DYSFUNCTION\*

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*Abstract.* Each part of the body is transmitted from parent to off-spring by genes. The growth and size of each part is dependent upon stimulation by hormones derived from ductless glands. If the endocrine influence is absent or withdrawn, dwarfing or hypoplasia results; if the stimulating hormone is in excess, gigantism or overgrowth may follow.

Examples of deficient growth are seen in infantilism, type Lorain, from pituitary dysfunction, and in cretins from the absence of thyroxin. Ablation of the anterior pituitary arrests the growth of the uterus and ovaries in the immature and causes atrophy of these organs in the mature animal. Growth is therefore a response to specific hormones. If there is no hormone there is no growth. From the pregnancy hormone the breasts of boy babies may lactate, their external genitals swell. Even descent of the testes may be precipitated, as recently shown by Engle, by the injection of the pregnancy hormone.

Normally the body is cast in a chemical mold, each cell and part being held to rigid limits as to size and shape by specific chemical compounds circulating in the blood. Thus an epithelial cell, the nose, an arm, the liver, maintain a definite individual size from birth to death.

Physiologic new growths of limited duration depend upon new or modified ductless glands of transient existence. That pregnancy may progress, for example, there is a special gland, the corpus luteum. Remove the corpus luteum and the hyperplasia of pregnancy ceases.

If one attempts to add to the size of the body or of its individual parts by transplanting a mass of epithelial cells, a bone, a finger, a gland from another person, cytolsins remove the alien elements. Even a skin graft from parent to child is not tolerated. For successful grafting the tissue must come from the individuals own body—an iso-graft.

Abnormal new growths may be called

into being by the dysfunction of ductless glands. These pathological overgrowths may involve the entire body, a system, a member, an organ, a tissue, a cell or group of cells. An example of overgrowth of the entire body is seen in the gigantism resulting from the over-activity of the eosinophilic cells of the anterior pituitary (eosinophilic adenoma). Overgrowth of a system from glandular dysfunction is illustrated by the virilism due to tumors of the suprarenal cortex. Overgrowth of a member is seen in certain forms of pituitary disease. Overgrowth of an organ is illustrated by gynecomastia apparently from the persistence of female sex hormones in the male. Overgrowth of a tissue is illustrated by the overgrowth of bone, the bony exostoses, and the Froelich type fatty deposit seen in various forms of pituitary dysfunction. The trochanteric type of adiposity from the menopause of castration and the overgrowth of ocular muscles in exophthalmic goitre are not as clear additional examples.

New growths which have long been considered as benign or malignant tumors result from endocrine dysfunction. Fibromyomata affect parts of the uterus that become hyperplastic during pregnancy and depend for their growth upon an ovarian hormone. Endometrial tumors (endometromas) grow in the uterus, pelvis, appendix, intestine, bleed with menstruation and show invasive or malignant tendencies but disappear when the ovarian function is abolished. According to Aschheim the hydatidiform mole occurs in association with multiple corpus luteum cysts which in turn probably depend upon a hormone from the anterior pituitary.

Tumor-like overgrowths develop from faulty lipid metabolism the underlying endocrine dysfunction not having been determined. Thus, hyperplasia of cells distended by lipoids occurs in Gaucher's disease, Neimann-Pick disease, Schuller-Christian disease, in xanthomata and in the foam cell tumors of the jaws and tongue. With the Krukenberg tumor the peculiar malignant growth of signet-ring cells limited to the gastro-intestinal tract, both ovaries, and occasionally the mammary glands, is contrary to our concepts of metastasis and suggests an underlying endocrine dysfunction. There is clearer evidence, however, that certain giant-cell tumors and cysts of bone are due to hyperparathyroidism. These tumors include growths that formerly were termed mye-

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lomas or giant-celled sarcomas. After removal of the parathyroid tumor or one or more of the parathyroids, the tumors may disappear.

There are features about the carcinoids (argentaffine tumors), about multiple enchondromas, multiple exostoses, multiple fibroneuromas and other tumors that suggest a possible endocrine basis.

We can no longer believe that tumors are always autogenous new growths and it is logical to consider that pathological new growths may develop and progress as a result of endocrine dysfunction.

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#### ANATOMIC BASIS OF CLINICAL MANIFESTATIONS OF CEREBRAL VASCULAR DISORDERS

Irving J. Sands, Brooklyn (Journal A. M. A., November 5, 1932), calls attention to the fact that recent investigations of the cerebral circulation and the discovery of the nerve control of the pial and the cerebral vessels have aroused new interest in the manifestations of cerebral vascular disorders. Pfeiffer and Cobb have disproved the old theory of end-arteries in the brain; in fact, they have demonstrated conclusively that the capillary bed of the whole cerebral cortex is an endless network, and that there is a free anastomosis between the capillaries of both the surface and the depth of the brain. Hassin has again called attention to the presence of nerve endings in the pial vessels, and Penfield has shown that the intracerebral arteries are innervated in a manner similar to that of the blood vessels of the pia, and, moreover, that the two nerve plexuses are continuous. Forbes and Wolff have demonstrated that the nerve supply of the vessels of the brain is derived from the sympathetic system, and that stimulation of the vagus causes dilatation of the vessels and stimulation of the sympathetic causes their constriction. These facts are of prime importance in the evaluation of the signs and symptoms of the various cerebral vascular disorders. Cerebral arteriosclerosis is the most common of the cerebral vascular disorders. It has been commonly accepted that this condition occurs most frequently in persons of superior intelligence. If one is to assume that there is a close relationship between excessive function and wear and tear of an organ, it is logical to infer that those who are particularly engaged in continuous cerebration must necessarily draw a large amount of blood to the brain, causing the cerebral vessels to function excessively. Emphasis has been placed on the strain of modern civilization as a factor in producing cerebral arteriosclerosis. The stress and strain of modern life, as reflected in anxiety, worry and emotional tension, must be expressed through the vegetative nervous system, and, consequently, on the cerebral vascular system through the action by the vagus and sympathetic systems. Heredity is regarded as playing an etiologic role. Another consideration in cerebral arteriosclerosis is the Virchow-Robin system of the brain. While there is still considerable dispute as to the presence of

the Virchow-Robin lymph spaces in the adventitial sheaths of the cerebral arteries, many who have worked with neuropathologic material are convinced that such a system exists. If, therefore, cerebral arteriosclerosis is found more frequently in those who pursue intellectual work and especially if it is apt to accompany the stress and strain of modern life, it is reasonable to assume that the lymphatic system of the brain must carry away excessive amounts of catabolic substances that may prove a source of irritation to the vessel wall and may start a train of physical and chemical changes that may lead to anatomically proved arteriosclerosis. People with cerebral arteriosclerosis generally complain of headache, dizziness, ringing in the ears, a knocking sensation in the head, a fulness in the head and an inability to concentrate. They are usually irritable persons. The sclerotic artery is unable to relax adequately before the oncoming blood stream and transmits the impact of the blood column directly to the adjacent brain tissue. The continuous pounding of the blood stream on the brain tissue through the sclerosed artery causes irritation of the nerve tissue. Moreover, the Virchow-Robin lymph channel, being handicapped by the arteriosclerotic changes in the vessel walls, is no longer as efficient a drainage system as in normal persons, and this may result in retaining toxic and irritating catabolic substances in the brain. The sclerosed internal carotid artery, passing through the petrous portion of the temporal bone, may prove a source of irritation to the cochlear and vestibular nerves, and may be in part responsible for the dizziness, the knocking sensation and the ringing in the ears of which these persons complain.

#### SUSTAINED ARTIFICIAL FEVER IN THE TREATMENT OF INTRACTABLE ASTHMA: PHYSIOLOGIC AND THERAPEUTIC CONSIDERATIONS

Samuel M. Feinberg, Strafford L. Osborne and Meyer J. Steinberg, Chicago (Journal A. M. A., Sept. 3, 1932), present a report concerning a group of forty-two patients with intractable asthma, 70 per cent of whom had complications such as emphysema, chronic bronchitis or bronchiectasis, and all of whom had been unrelieved by the usual methods of treatment. Fever, produced by high frequency currents according to a described improved technic, was tried in all these patients and was found to be a safe procedure. Of thirty-five of those in whom the results have been ascertained, 51 per cent had a complete remission varying from several days to nine and one-half months, and 29 per cent had improvement without remissions. It is possible that with cases of milder degree and with more persistent treatment even better results may be obtained. The laboratory determinations and other observations do not as yet allow any conclusion as to the mechanism of this relief. It is suggested that fever therapy may possibly be found useful in other allergic conditions such as urticaria, angioneurotic edema, eczema, hay fever and migraine. In conclusion, the authors state definitely that in fever therapy they have found a method of obtaining relief in some cases of intractable asthma in which all other methods had heretofore failed.

# THE JOURNAL

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### EDITORIAL

#### SCIENTIFIC EXHIBITS

Those interested in Scientific Exhibits are reminded that the House of Delegates, meeting at Oklahoma City, May, 1930, directed that, "All exhibits offered to this Society as Scientific be passed upon by the Scientific Committee of this organization." This was amended that offerings were to be made at least sixty days prior to the meeting. This should be distinctly remembered and those who wish to have scientific exhibits should take the matter up with Doctors R. M. Howard, Chairman, Oklahoma City; P. P. Nesbitt, Tulsa; A. B. Chase, Oklahoma City; C. A. Thomp-

son, Secretary, Muskogee. As a matter of convenience the Chairman, Dr. Howard, will be in better position to handle the matter than others, as he resides in Oklahoma City. It is suggested that the wall space and floor space for these exhibits be limited to every reasonable degree.

#### THE STATE BOARD OF MEDICAL EXAMINERS, DR. J. M. BYRUM, SECRETARY

In making his biennial report for 1930-31, 1931-32, he states that during the two years, 157 physicians were licensed to practice in the following manner:

Recognized graduates, 105; reciprocity, 47; re-registration of territorial licenses, 3; duplicate, lost or destroyed licenses, 2. During the same period 58 physicians have been endorsed by reciprocity to other states. Actually, however, there has been no gain in the number of physicians actively engaged in the practice of medicine within the state. It is noted that from the most available statistics, the directory of the American Medical Association, 2484 names are licensed as practicing within the state; that is, one physician for every 964 population. It was noted that the average in Missouri is one for every 661; Kansas, 867; Arkansas, 939; Texas 899; while the general average over the entire United States is one for 837 people.

The report notes that while there is no general shortage, it is admitted that many small towns and rural communities have no resident physician, whereas originally they had one or more. This is explained by good roads, automobiles, and the tendency of people to crowd into definite and more cultural centers. The report is uncertain as to what is to be done with these remote communities except to say that it is a community proposition largely, and that the people must get together and offer inducements to physicians to locate among them if they expect medical service in their communities.

#### OUR USUAL BIENNIAL LEGISLATIVE ASSOCIATION

Every so often there pops into the legislature some ignoramus, usually with a personal grievance or prompted by some of the cults, with a proposition to limit mileage fees of the doctor. The latest inspiration may be found in House Bill 199,



which limits doctors to twenty-five cents per mile on calls. This proposition, young as is the State of Oklahoma, is nothing new. We have had it before the legislature prior to this and, very sensibly, no one has ever paid any attention to it. Of course the sponsor of this act does not know that doctors are making calls all over Oklahoma for nothing, and have been for two years; that probably as high as 80% of many physicians' office work is not worth putting on the books; in other words, the medical man, as a rule, will be found looking after his own and rendering service to the needy regardless of money.

There is only one suggestion to this legislator, whoever he is, and that is, that the doctors are not going to the country at all; there will be no mileage if it is felt that anyone is undertaking to take advantage of them. To be consistent, this legislator should refuse his \$6.00 per day and cut his mileage to bus fare and per diem to \$1.00 daily, sure he can live in Oklahoma City on \$1.00 a day. He should undertake to limit the salaries paid ministers, fees of attorneys; socialistically he might go a step further and fix prices on boots, shoes, caps and clothing.

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#### "A CLASS" MEDICAL SCHOOLS, HOMEOPATHY AND ELECTICISM

On January 5, there met in Oklahoma City a hybrid organization which constituted themselves as the Legislative Committee of the Oklahoma Electric and Homeopathic Medical Associations. It should be remembered that these schools are part of the present composite board of Medical Examiners, and, so far as it is known, its graduates and matriculants are slowly disappearing from the medical field in the United States. This organization approved much or most of the legislative propositions advanced by the State Medical Association, but in substance immediately proposed to emasculate and devitalize by senseless amendments or opposition some of the important ones. For instance the right giving clinics and laboratories that legal right to obtain pure grain alcohol is smothered with the proposition that the same right be granted *all practitioners of medicine*. It is obvious that this would be one of the most extreme nuisances the doctor of Oklahoma would have to contend with, even if it were passed. In the first place the general practitioner has rarely if any use for pure

grain alcohol, the denatured product serving his purpose just as well. Many doctors would never take out a license giving them permission to prescribe alcohol and those who would, would promptly discontinue their application if they realized what a nuisance the right would be, for every fool friend would immediately want a prescription from "Doc" for alcohol; then, on the other hand, the right would unquestionably be abused in some instances, just as the right to prescribe whiskey is now abused by practitioners of medicine in other states. We think we speak for the medical profession when we say we want no such right. Good whiskey is certainly occasionally needed but we rarely, if ever, have an occasion to use it.

Another proposition, vigorously opposed, was that limiting applicants for medical licensure to class A medical schools. Evidently these gentlemen did not know or did not realize that that is now and has been the rule enforced practically all over the United States, and that until it is generally maintained here we will have a certain low grade type of practitioner creeping in. We regret to see this schism of medicine throwing a monkey wrench into constructive medical legislation.

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#### WASTEFUL PRESCRIBING

We occasionally get something good from our "composite" friends. From the Hahnemannian Monthly we get an editorial on "Waste in Dispensing." We have often wondered and occasionally spoken of that, and we must admit that we still have physicians who write prescriptions from eight to sixteen ounces when often two to a half dozen doses of the medicine would suffice. Sometimes none of it is necessary; however, that is another story. Most acute illnesses require very little medication—something merely to relieve the present aggravating symptoms, sometimes a small amount of symptomatic medication until the doctor is more positive as to what he is dealing with. Our contemporary cites a case of 120 tablets being prescribed, the consumption of which would have required 240 hours or 10 days, that is, if the patient remained awake night and day. The practical point being that only 8 tablets being needed, the patient being well in three days. He cites the prescribing of an ounce of Fowl-

er's solution of arsenic, the dosage, 3 drops 3 times daily, in other words enough to last 160 days. The writer recalls seeing a prescription of 8 ounces of fluid extract of ergot, then a costly drug for a post-partum case, that happening to be a vicious waste of the patient's money and incidentally the patient "tumbled" to the situation and never forgave the doctor. Probably three doses were all that were ever used, the rest of the medicine still remains in the archives of the medicine chest, unhonored and unsung.

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### **Editorial Notes—Personal and General**

DR. D. M. GORDON, Ponca City, who has been ill at his home, is reported improving.

DR. WALTER M. JOHNSON, Ardmore, who has been ill with pneumonia is reported improved.

DR. C. J. ALEXANDER, Clinton, is suffering from injuries received in a fall from the porch of his home.

DR. T. D. ROWLAND, Shawnee, received notice of his appointment as local surgeon for the Santa Fe Railroad.

GREER COUNTY MEDICAL SOCIETY elected the following officers to serve for 1933: Dr. W. O. Dodson, Willow, president, and Dr. J. B. Hollis, Mangum, secretary.

DR. CURT von WEDEL, Oklahoma City, announces the establishment of a department of Internal Medicine and Diagnosis, under the supervision of Dr. Harry A. Daniels, formerly of Rochester, Minnesota.

GARFIELD COUNTY MEDICAL SOCIETY elected the following officers at their meeting in December, 1932: President, Dr. J. R. Swank, Enid; Dr. R. C. Baker, vice president, Enid; Dr. J. R. Walker, secretary-treasurer, Enid.

DR. L. J. MOORMAN, Oklahoma City, who has headed the Tuberculosis Society for the last fifteen years, again has been elected President. In addition to this Dr. Moorman is Vice-President of the National Tuberculosis Society.

PAYNE COUNTY MEDICAL SOCIETY elected the following officers to serve for 1933: President, Dr. D. J. Herrington, Cushing; Vice President, Dr. D. A. Mitchell, Stillwater; Secretary-Treasurer, Dr. Katherine Bergegrun, Stillwater.

ROGERS COUNTY MEDICAL SOCIETY elected the following officers at their meeting January 16th: President, Dr. J. C. Bushyhead, Claremore; Vice President, Dr. W. S. Mason, Claremore; Secretary-Treasurer, Dr. W. A. Howard, Chelsea.

PUSHMATAHA COUNTY MEDICAL SOCIETY elected the following officers to serve for 1933, at their meeting in December: President, Dr. D. W. Connally, Nashoba; Vice President, Dr. H. C. Johnson, Antlers; Secretary, Dr. E. S. Patterson, Antlers.

McCLAIN COUNTY MEDICAL SOCIETY elected the following officers for 1933: President, Dr. I. N. Kolb, Blanchard; Vice President, Dr. W. C. McCurdy, Purcell; Secretary, Dr. O. O. Dawson, Wayne; Delegate to state meeting, Dr. B. W. Slover, Blanchard.

THE AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY will hold a clinical examination in Milwaukee on Tuesday, June 13, 1933. For further information and application blanks address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburg, Pa.

JACKSON COUNTY MEDICAL SOCIETY elected the following officers to serve for 1933: Doctors, J. S. Stultz, Altus, president; C. G. Spears, Altus, vice president; E. W. Mabry, Altus, re-elected secretary; E. S. Crowe, Olustee, delegate; R. F. Brown, Altus, alternate.

CRAIG COUNTY MEDICAL SOCIETY met January 17th and elected the following officers for 1933: President, Dr. Louis Bagby; Vice President, Dr. D. B. Stough; Secretary-Treasurer, Dr. W. R. Marks; Delegate, Dr. F. M. Adams; Alternate, Dr. C. S. Neer, all of Vinita. Censor, Dr. J. F. Walker, Grove.

COMANCHE COUNTY MEDICAL SOCIETY elected the following officers to serve for 1933: President, Dr. Thomas R. Lutner, Lawton; Vice President, Dr. L. W. Ferguson, Lawton; Secretary-Treasurer, Dr. E. Brent Mitchell, Lawton; Censors, Doctors J. W. Malcolm, H. A. Angus, and P. G. Dunlap, all of Lawton.

KIOWA COUNTY MEDICAL SOCIETY held their regular meeting January 16th, and the following officers were elected for 1933: President, Dr. C. R. Preston, Mountain Park; Vice President, Dr. J. M. Bonham, Hobart; Secretary-Treasurer, Dr. B. H. Watkins, Hobart; Censors, Drs. H. C. Lloyd, J. A. Sand, and J. D. Winter, all of Hobart.

MARSHALL COUNTY MEDICAL SOCIETY elected the following officers for 1933, at their regular meeting in January: President, Dr. P. F. Robinson, Madill; Vice President, Dr. J. H. Logan, Lebanon; Secretary-Treasurer, Dr. J. H. Veazey, Madill; Delegate to state convention, Dr. W. D. Haynie, Kingston; Alternate, Dr. J. L. Holland, Madill.

CUSTER COUNTY MEDICAL SOCIETY met at Clinton, December 20, 1932, and elected the following officers for 1933: Doctors, K. D. Gosson, Custer, president; W. E. Seba, Leedy, vice president; E. E. Darnell, Ponca City, secretary-treasurer; McLain Rogers, Clinton, delegate; J. T. Frizzell, Clinton, alternate; N. E. Ruhl, Weath-erford, censor.



THE EXTENSION DIVISION, Oklahoma University, will show medical and surgical motion picture films at Guymon, March 13, and at Woodward, March 14, the program as follows:

1. Diagnosis and Treatment of Infections of the Hand.
2. Acute Appendicitis, Professional.
3. Forceps Delivery.

THE IMPERIAL LIFE INSURANCE COMPANY, Tulsa, has been organized with Dr. Fred S. Clinton as vice president and medical director. Dr. Clinton advises that wherever possible none but members in good standing of the Oklahoma State Medical Association will be appointed or retained as examiners. He estimates that from 250 to 300 examiners will be required.

BECKHAM COUNTY MEDICAL SOCIETY held a meeting at the Tisdal Hospital, Elk City, and reorganized their County Medical Society, in December. The following officers were elected for 1933: President, Dr. V. C. Tisdal, Elk City; Vice President, Dr. Phil DeVanney, Sayre; Secretary-Treasurer, Dr. C. F. Jones, Erick; Censors, Drs. H. K. Speed, Sayre; O. C. Standifer, Elk City, and R. C. McGregory, Erick.

STEPHENS COUNTY MEDICAL SOCIETY met in Marlow, December 27, 1932, with Dr. C. N. Talley as host, and elected the following officers for 1933: Doctors, C. N. Talley, Marlow, president; C. P. Chumley, Duncan, vice president; D. Long, Duncan, re-elected secretary-treasurer; J. L. Patterson, Duncan, delegate; J. B. Carmicheal, Duncan, alternate; B. H. Butnett, Duncan, public policy; C. C. Richards, Marlow, censor.

WOODS-ALFALFA COUNTY MEDICAL SOCIETY'S meeting, as reported in the January issue of the Journal, reported officers but failed to state for which Society; they were for Woods County, however. These two counties hold joint meetings, but have separate officers. Officers for Alfalfa County Medical Society are as follows: President, Dr. H. E. Huston, Cherokee; Vice President, Dr. J. Wendall Mercer, Cherokee; Secretary-Treasurer, Dr. L. T. Lancaster, Cherokee.

CANADIAN COUNTY MEDICAL SOCIETY elected officers for 1933, at a turkey dinner held in December at El Reno: Dr. D. F. Stough, Sr., Geary, was re-elected president; Dr. P. F. Herod, El Reno, vice president; Dr. D. F. Stough, Jr., Geary, re-elected secretary-treasurer; Dr. Thomas M. Aderhold, El Reno, delegate; Dr. D. P. Richardson, Union City, censor. Drs. J. R. Heatley and S. R. Cunningham, Oklahoma City, gave a joint lecture on the taking of X-rays for the treatment of fractures of the forearm and elbow. Mr. L. W. Kibler, director of the post graduate medical study at the University of Oklahoma, presented a film showing infections of the hand.

POTTAWATOMIE COUNTY MEDICAL SOCIETY held its annual meeting, January 11th, at the Masonic Temple Banquet room, Shawnee. The following program was given after a dinner was served:

Introduction of Guests:

Violin and Vocal Numbers—Mrs. Horton Hughes, Mrs. Knox Byrum.

A Toast: "To Our Wives,"—Dr. R. M. Anderson, President, Oklahoma State Medical Association.

President's Annual Address—Dr. A. C. McFarling.

Annual Address: "Diagnosis and Surgery in Gall Bladder Disease,"—Dr. Frank H. McGregor, Mangum.

Address: "State Medical Association,"—Dr. T. H. McCarley, McAlester, President-elect, Oklahoma State Medical Association.

Installation of Officers—Dr. L. S. Willour, McAlester.

Motion Picture: "An Alaskan Hunting Trip,"—Dr. J. E. Hughes.

The following officers will serve for 1933: President, Dr. Clinton Gallaher; First Vice President, Dr. Horton Hughes; Second Vice President, Dr. R. C. Kayler; Secretary-Treasurer, Dr. H. G. Campbell, all of Shawnee.

#### DOCTOR FENWICK RIEFF DEANS

Dr. F. R. Deans, pioneer physician of Fairland and Miami, Oklahoma, died at his home in Miami, December 31, 1932, at the age of 67 years, following an illness of two years.

Dr. Deans was born at Garfield, Arkansas, on January 17, 1865. He was graduated from the Barnes Medical College at St. Louis in 1897, and moved to Fairland, where he practiced until the World war, when he enlisted as a lieutenant and served at Camp Greenleaf at Chattanooga, Tennessee. Following the war he was appointed statistician and physician of the Seneca Indian School at Wyandotte, where he remained until 1923, when he moved to Miami.

Dr. Deans is survived by his wife, seven sisters and two brothers.

Interment was in the Fairland cemetery. The Masonic burial service was conducted at the grave by the Fairland lodge.

#### DOCTOR WILLIAM H. SMEDLEY

Dr. W. H. Smedley, pioneer physician of Capron, died December 16th, at his home, of coronary occlusion.

Dr. Smedley was born at St. Joseph, Mo., in 1863. He came to Woods County in 1917, graduating from medical college in 1888. Dr. Smedley was 69 years of age at the time of his death.

He was a member of the Oklahoma State Medical Association and Woods County Medical Society.

He is survived by his wife and one daughter.

Burial was in A. O. U. W. cemetery in Alva.

## DOCTOR R. L. RUSSELL

Dr. R. L. Russell, Marlow, Oklahoma, died at Chickasha, in October, 1932.

Dr. Russell was born at Washington, D. C., in September, 1870. He graduated from the medical department of Columbia University, Washington, D. C., in May, 1901.

## DOCTOR JOSEPH BRYAN ROLATER

In the recent death of Dr. J. B. Rolater at Cave Springs, Ga., Oklahoma City and State have lost one of their most widely known pioneer surgeons. Born in 1861 on a farm in Alabama, just across the Georgia line, he received his academic education at Cave Springs, Ga., the nearest border town.

In 1884 Dr. Rolater received his M.D. degree from Vanderbilt University, Tenn., after which he practiced his profession for two years at Cave Springs. In 1886 he came to Texas and from Texas to Oklahoma City, in 1889, two months after the opening, where he continued in the active practice of his profession until his retirement four years ago.

Dr. Rolater was a man of more than ordinary ability as a surgeon and his medical training was far above the average for that time. Graduating in medicine from one of the best Southern Schools he later did work under the most eminent men of the East, such as Dr. John Wyeth of New York City, Dr. Hugh Young of Baltimore, and others. Dr. Rolater was well and favorably known by the leaders of the profession in New York more than twenty-five years ago.

In 1906 Dr. Rolater organized and built the Rolater Hospital in Oklahoma City which later was leased for a term of years and became the University Hospital as a part of the State University of Oklahoma School of Medicine.

Always interested in medicine and surgery he participated in the organization and became a charter member of both the Oklahoma County and the Oklahoma Territorial Medical Societies where in the early days he was especially active.

Not only in his profession but as a business man was Dr. Rolater successful. At the time of his death he was rated as one of the largest individual owners of real estate in Oklahoma City.

As a splendid gesture one of the last acts of his life was to build a church at Cave Springs, Ga., where he spent his boyhood school days and present it to the congregation.

To many of the Oklahoma pioneers Dr. J. B. Rolater was the only surgeon and to those who came to know and understand him he was respected and admired and in many instances beloved.

By the profession Dr. Rolater will be remembered as a man of indomitable will with few close friendships and as a surgeon of more than ordinary training and ability.

## ENDEMIC EDEMA

John B. Youmans, Nashville, Tenn. (Journal A. M. A., Sept. 10, 1932), reports cases of edema which differ in several respects from cases of nutritional edema reported by others, particularly those seen during epidemics. In general, the disease, is milder and the patients are less severely undernourished. The symptoms of severe undernutrition, bradycardia, hypotension, subnormal temperature and lowered metabolic rate are lacking. The absence of any disease causing the malnutrition distinguishes them from most of the sporadic cases. The changes in the serum protein are consistent with the mild nature of the symptoms. Greater reductions in the serum proteins have been reported by other writers. In some instances variations in the methods are responsible for the difference. Much more important is the difference in the severity of the disease and the circumstances under which the author's studies were made. A lowered osmotic pressure due to lessened serum proteins is but one of the two principal factors at present thought to be concerned in this form of edema and determines only a tendency to edema. The other factor is capillary pressure, and the occurrence of edema probably depends primarily on the balance of force between the capillary pressure tending to push fluid out of the vessels and the osmotic pressure tending to hold it in. An increase in capillary pressure can cause a filtration of water from the blood in the presence of normal amounts of protein. Krough Landis and Turner have recently shown that the erect human being is always near edema. Therefore even a slight reduction in serum protein might result in the formation of edema, provided the capillary pressure remained unchanged, and edema would be more apt to occur if the capillary pressure were increased. All the patients studied by the author were ambulatory patients, more or less engaged in their usual activities, and it might be expected, therefore, that edema would occur at higher concentrations of serum protein than in patients who were confined to the hospital and whose activities were greatly restricted. The influence of the restriction of physical activity is well shown by two patients who were hospitalized and who quickly lost 4 and 2 Kg., respectively, with little or no change in the diet. These cases of endemic edema have an importance out of all proportion to the mildness of the symptoms. They represent, the author believes, the effect of a dietary inadequacy of slight degree but long duration. In the past, interest has been focused on relatively acute and well developed cases of deficiency disease in which there exist gross inadequacies. At present attention is being directed to milder and more chronic disorders; to the effect of minimum or suboptimum conditions of diet, rather than severe deficiencies. Disease which is the result of gross inadequacy may be of greater individual importance, but, on the other hand, is more easily and earlier detected and remedied. Less serious errors in diet, with their greater frequency and more subtle effort on a population, are of vastly greater general importance. In the present cases the edema itself probably has little harmful effect on the patient. If, as seems likely, the principal dietary inadequacy in these cases is a lack of protein, the edema is important only so far as it indicates a prolonged but mild protein insufficiency. Relatively little is known regarding the effect of such a deprivation in man or what constitutes the optimum amount of this food substance.



# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic

714 Medical Arts Bldg., Oklahoma City

**Results of Operations for Prolapse of the Uterus and Bladder.** George M. Laws, M.D., Philadelphia, Pa. *American Journal of Obstetrics and Gynecology*, December, 1932, Page 864.

This is a report based upon 200 consecutive operations performed upon 196 patients for all degrees of relaxation of the anterior vaginal wall and of prolapse of the uterus. It is pointed out that the most important consideration in determining the nature and extent of operative treatment is whether or not the menopause has been passed. The remainder of the article is principally a tabulation of the various procedures with the results obtained.

Ninety-five patients were treated before the menopause and 101 after the menopause. Of the patients treated before the menopause fifty-two were treated with plastic alone. Thirty-five with abdominal operation and plastic and five with vaginal hysterectomy. The most significant point that is made concerns the fact that plastic operations alone where there is bladder and uterine prolapse is an incomplete operation and recurrence of symptoms is much more likely than if the plastic were supplemented by abdominal operation and suspension of the uterus.

Of the operations after the menopause thirty-nine had plastic operation alone. Thirty-seven had the interposition operation. Eight had vaginal hysterectomy. Thirteen had abdominal and plastic operations and four had abdominal operation alone. The result of the operations after the menopause justifies the treatment of the majority of the cases of genital prolapse by vaginal operations in the opinion of the authors.

Consideration is also presented for relaxation of the urethral sphincter and twenty cases reported in which the Kelly plication operation was done. The results indicate that with great frequency too little attention is paid to bladder symptoms and inadequate operation is frequently performed. Briefly, the difficulty of restoring anatomic and physiological conditions in the bladder base and the urethra are frequently minimized.

**Comment:** This article merely emphasizes a good many of the features that are constantly considered by gynecologists, the principal ones of which are that adequate and complete, rather than inadequate, incomplete, operation should be more often performed, and that in the majority of cases after the menopause vaginal operations are preferable. It should not be overlooked, however, that in this field, as well as others, individualization of a particular case and situation is invaluable.

—Wendell Long.

**Temporary Sterilization by the Injection of Human Spermatozoa. A Preliminary Report.** M. J. Baskin, M.D., Denver, Colo. *American Journal of Obstetrics and Gynecology*, December, 1932, Page 892.

These authors have treated 20 women by injection of human spermatozoa given in three injections seven days apart with a total volume of semen amounting to an average of 9 c.c. in each case. They have subsequently examined slides made in the following manner: One with human spermatozoa, one with spermatozoa to which nonimmunized blood serum was added, and one with human spermatozoa to which immunized serum was added. Cervical secretions were also tested against serum in every case. It has been found in their 20 cases that with but one exception that for a period of about a year the immunized serum will kill spermatozoa in about thirty minutes at first and in about two to four hours at the end of the year, and that sterilization without pregnancy is maintained over this period.

They summarize from the extensive literature the following conclusions:

1. Immunization of women with human spermatozoa is possible.
2. The immunization lasts about one year.
3. Revaccination at end of year prolongs the immunity for at least another year.
4. The period of immunity and degree of immunity can be determined by the blood.

Again quoting from their work is the following paragraph:

"A number of questions must be answered concerning this work. Principally among these are: first, possibility of permanent sterility; second, whether ovarian changes occur; third, whether there is any effect of future generations. We are now carrying on work in an attempt to answer these questions.

**Comment:** This is an interesting bit of experimental work upon which no comment seems to be necessary other than to theorize as to whether it is a question of specific protein sensitization or a situation of hormone significance.

—Wendell Long.

**The Treatment of Irreducible Intussusceptions in Children.** Albert H. Montgomery, M.D., and J. J. Mussil, M.D., Chicago. *Surgery, Gynecology and Obstetrics*, September, 1930, Page 415.

One of the baffling pathological conditions that may confront the surgeon is an irreducible intussusception. The seriousness of this condition is augmented by the fact that most of them are found in very young children, since 80% of intussusceptions occur in children under two years of age. In addition, these young patients are suffering from the toxemia that is produced by an intestinal obstruction. Perrin and Lindsay

report 400 cases of acute intussusception in which the irreducible ones under all forms of treatment caused a mortality of 100% in children under 2 years of age, and 70% in older children.

The surgeon who finds that his patient has an intussusception that he cannot reduce faces a grave problem. He may try various procedures, such as: 1. An artificial anus, by making an enterostomy or a colostomy above the obstruction, leaving the intussusception in the abdomen. 2. A lateral anastomosis around the obstruction leaving the intussusception in the abdomen. 3. A resection of the intussusception making an artificial anus of the ends of the bowel as in the Mikulicz's operation. 4. A resection of the intussusception with a lateral or end to end anastomosis. 5. A resection of the intussusception through an incision in the outer layer as in the Coffey operation.

There are objections to each of the various operations. In young children any operation which includes the making of an artificial anus will probably lead to a fatality, as the infant loses too much food and water through the artificial opening.

Some writers have objected to operations which leave the intussusception in place thinking that there is grave danger in the sloughing that will follow. The ideal treatment, of course, is to remove the strangulated portion and re-establish the continuity of the bowel by anastomosis. Unfortunately, however, all such operations seem to be too formidable for young children.

Since the advent of surgery in the treatment of intussusception reports of spontaneous elimination have naturally been rare. However, it is known that nature cures some of these irreducible intussusceptions. Treves is quoted as saying, "If the intussusception be irreducible then cure by spontaneous reduction is impossible, as is also reduction by means of forcible enemata or by laparotomy. On the other hand if the tissues of the mass be glued together by adhesions about the neck, the parts are most advantageously placed for spontaneous recovery by elimination of the gangrenous intussusception."

It was by taking advantage of this tendency to spontaneous cure that the authors were able to achieve success in two cases, after total failure in other cases in which the procedures involving resection already mentioned were used. Their good results were attained by simply fixing the intussusception in place by a row of interrupted silk sutures about the neck and then making a lateral anastomosis between the ileum and the colon distal to the intussusception.

Encouraged by the successful outcome in these two cases and before attempting to draw any definite conclusions they carried out some experimental work on dogs. The conclusions from this experimental work were:

1. In dogs, in which a portion of bowel is invaginated and fixed, there is first a very strong tendency towards spontaneous reduction and in case the invagination remains in place, the bowel will function with little disturbance in the general health of the dog.

2. Invagination alone is not sufficient in dogs to produce an obstruction to the blood supply to the invaginated portion of the bowel.

3. Dogs in which the blood supply to a portion of the bowel is first shut off and then in-

vaginated will die with a picture of chronic obstruction.

4. Lateral anastomosis of ileum to cecum around the intussuscepted portion of bowel will permit a normal function of the remainder of the bowel with no disturbance to the general health of the dog.

**Comment:** Two young children with very definite irreducible intussusceptions were successfully treated by fixing the irreducible part in position by a row of silk sutures placed about the neck and short circuiting this obstructed portion by a local anastomosis.

I have operated upon 15 cases of intussusception. In every instance where a resection with anastomosis was done there has been a death. It is commonly stated that where a resection is necessary there is little hope of recovery.

For this reason any objection one might have to a procedure which allows the intussusception to remain in place because of fear of the sloughing that will follow must be lessened by the knowledge that the ideal procedure is almost certain to be fatal, whereas this procedure is nature's way of relieving an irreducible intussusception and that it has been successfully used by the authors.

I have never carried out this simple procedure advocated but I shall most certainly do so the next time I am confronted with an irreducible intussusception.

—LeRoy Downing Long.

**Traumatic Tuberculous Peritonitis Following Contusion of the Abdomen (Contusion de l'Abdomen—Peritonite Tuberculeuse Traumatique Consecutive) by Paul Guibal, Beziers. La Presse Medicale, Oct. 8, 1932.**

A boy of eight years was playing late in the afternoon by running along a road pushing a stick seven or eight feet long, the end of the stick being held in the hands next to the abdomen. The end of the stick on the ground struck a rock. The blow on the abdomen was so violent that the boy was thrown on his back. There was complaint of pain in the abdomen, but he was able to walk a short distance to his home where he ate supper with a good appetite, complaining of pain in abdomen occasionally. That night there was a good deal more pain.

Patient was seen by a physician at 4:00 P. M., next day, at which time there was sharp pain in abdomen, muscular resistance, temperature 103, pulse 110. No vomiting.

On admission to hospital three hours later—exactly twenty-four hours after accident—good facial expression, pulse 132, rectal temperature 104. Still no vomiting. Bowels had not moved since accident. Pain and tenderness just below umbilicus at point of injury. Muscle tension below, but none above umbilicus. No ecchymosis. Slight distention abdomen which was immobile on deep inspiration.

Immediate operation disclosed distended small intestine with here and there discrete ecchymosis. There was a very little dark blood in pelvis. On displacing viscera upwards so that mesentery could be examined some thin, caseous material was found near the root of it. There was an enlarged lymph gland the size of a small egg. A further investigation showed a rent in the



mesentery leading into a small abscess from which the caseous material escaped. Obviously it had been ruptured by the blow on the abdomen. The abscess was cleaned out and tincture of iodine applied to inside of it by gentle swabbing. An attempt was made to close opening to abscess, but it was difficult because of the fragile margins and the danger of wounding inside of mesentery. Gross material was removed from abdomen which was then closed without drainage.

The patient did well for several weeks, but at the end of thirty-five days examination revealed distended abdomen with palpable indurated nodules. Rectal touch showed masses in pelvis. There were indurated glands in the groins, and a small "cold abscess" in the operative incision. Patient had lost weight and was pale. Pulse 100. Rectal temperature 101.3. The conclusion was that the patient had a fibro-caseous form of tuberculous peritonitis due to traumatic intraperitoneal rupture of a caseous lymph gland in the mesentery (peritonite tuberculeuse traumatique a forme fibro-caseuse par rupture intraperitoneale d'un ganglion caseux du mesentere), the inoculation having been produced in exactly the same way as in laboratory animals when tuberculous material is injected into peritoneal cavity.

After three months of unfavorable progress systematic heliotherapy and appropriate hygienic measures resulted in apparent cure. Patient was examined June, 1932, and condition found to be excellent.

The author points out that in this case there was no evidence of tuberculosis outside of peritoneal cavity.

**Comment:** This report indicates two important truths:

1. Surgical tuberculosis, such as tuberculosis of the mesenteric lymph glands, of fascia, bone, skin, connective tissue is by no means necessarily associated with pulmonary tuberculosis. It appears pretty clear that many cases of this character are due to infection by the bovine bacillus which does not have a predilection for lung tissue.

It will be recalled that at one time Prof. Koch did not believe in the duality of tuberculosis. I visited the Koch Laboratory in 1913, and while there I asked Prof. Israel, Koch's successor, if he would tell me what Prof. Koch's final conclusion was on this point. He replied that long before his death Koch was of the definite opinion that there was a distinct difference between human and bovine tuberculosis in many respects, and that it was his conclusion that most of the cases of so-called surgical tuberculosis were due to infection by bovine bacillus.

2. The remarkable work of continental physicians, especially in Switzerland and France, and notably by such able men as Rollier, has demonstrated the great value of heliotherapy in surgical tuberculosis. It appears that it is more effective in high altitudes, but its probable value should not be overlooked, regardless of locality.

—LeRoy Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Interstitial Keratitis in Late Congenital Syphilis.**  
Harry M. Robinson, Baltimore, Md., *Southern Medical Journal*, for September, 1932.

In a study of 144 cases the author indicates that the diagnosis of interstitial keratitis is not made until irremediable corneal scarring has occurred. This may be due to failure to appreciate the importance of congenital syphilis in the etiology of this condition, to the unfamiliarity with the common stigmata of late congenital syphilis, or to failure to employ routine Wassermann tests as a measure of diagnosis. Interstitial keratitis is equally frequent in white and colored males and females. Adequate modern treatment shortens the course of the acute inflammatory process in interstitial keratitis, materially lessens residual corneal scarring, improves the ultimate visual acuity, and lessens the incidence of relapse. Interstitial keratitis which is usually unilateral originally can be prevented from becoming bilateral by adequate treatment in a high proportion of cases.

**Syphilis in the Rural Negro.** D. G. Gill. Montgomery, Alabama. *Southern Medical Journal* for September, 1932.

In this article a survey of the prevalence of syphilis amongst rural negroes was made in Macon County, Alabama. A total of 3603 individuals of all ages were tested; 1282, or 36% had positive Kahn tests. 1203 were placed under treatment, and 317 of these were classed as congenital, 866 as acquired. Of those who were put on neo-arsphenamine, 60.92 per cent completed their course of treatment. The average patient received 15.85 doses of neo-arsphenamine, and mercury inunctions for 21 to 85 weeks. There was a reversal of the Kahn test in 56% of 875 patients who received neo-arsphenamine and mercury. Of the males 49.33% gave a history of a primary lesion, only 2.54% of the females gave a similar history. Previous therapy had been nil or very inadequate. A history of one or more miscarriages was frequent among the infected females. The average cost per patient was \$10.65. He concludes from this that field clinics are feasible for mass treatment if attached to a well functioning county health department.

**Unsuspected Lues Revealed by the Routine Wassermann Test.** Charles R. Drake, Minnesota *Medicine* for December, 1932.

This article deals with the number of positive Wassermanns picked up in a general hospital (Swedish Hospital, Minneapolis), for the months November and December, 1931, January and February, 1932. During this time 1113 Wassermanns were taken on all cases entered except tonsil cases. Sixteen in this series were positive, they were rechecked and a second test confirmed the first. All of these were unsuspected cases of syphilis, were evident chronic infections which had never been treated and were coincident with

the various medical and surgical conditions for which the patients were admitted.

**Mortality in Cystoscopy.** Charles D. Donahue, Eugene Oregon, *Northwest Medicine* for December, 1932.

The author mailed questionnaires to thirty different urologists of the United States, all of whom were members of the A. U. A., asking for the mortality from cystoscopy during the past five years, also the number of cystoscopies. There were twenty-six to answer. This twenty-six men had done 90,200 (approximately) cystoscopies in the past five years, and one death occurred in 6,442 cases. This included all types of cystoscopic work, pyelography, and all types of patients including all those who were known to be poor risks. Most of the deaths occurred in what was called "poor risks." He enumerates the contraindications for cystoscopy, pointing out two classes. (1) Those in which it is contraindicated, being (a) acute urethritis, and acute cystitis. (b) Cord lesions with paralysis of the bladder and uninfected urines. (c) Active luetics with pyuria, these should first receive antiluetic therapy. In the second group he includes those cases which should be approached with caution. (a) Carcinoma of the prostate and malignant bars, (b) contracted tuberculous bladders, (c) chronic and deep seated infections of the bladder, (d) strictures of the posterior urethra, (e) diabetics, (g) leukemias and (h) exophthalmia.

**Caudal Anaesthesia in Urology.** Raymond A. Harpin, *New England Journal of Medicine* for January 5th, 1933. Page 31.

The author states that the lack of adoption of caudal block anaesthesia is the reason cystoscopic manipulations are looked upon with dread by the majority of patients either because of personal experience or from knowing patients who recounted tales of their own trials. He recounts this anaesthesia done by him on the house service of Massachusetts General Hospital and in private practice since October 1, 1931—113 are reported. He describes the technique of caudal block. If after the needle has been introduced in sacral notch and no blood or spinal fluid is received on suction 20 to 30 c.c. of 2 to 3% procaine hydrochloride solution is injected slowly. Patient is turned on back, and it will be found that with good block, the skin of the anus, scrotum, perineum, penis or vulva is anaesthetized, as is also the lower rectum, vagina, urethra, prostate, posterior wall of bladder and ischio-rectal fossae. As preliminary treatment he gives 3 to 6 grains of sodium amytal one hour before operation as it gives the required sedation and to some people being sensitive to procaine hydrochloride, this barbituric acid derivative offers some protection.

#### MEAD'S 10 D COD LIVER OIL IS MADE FROM NEWFOUNDLAND OIL

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#### CLINICAL TEACHING OF PREVENTIVE MEDICINE

Dwight O'Hara, Boston (Journal A. M. A., Aug. 27, 1932), presents the fourth year teaching of preventive medicine at Tufts College Medical School. Patients sick in their homes and cared for by the fourth year students, under supervision, are used as clinical material. The students have conferences with clinicians who are interested but not specifically trained in the science of public health. The opportunities for and the limitation of preventive measures are thus pointed out under the actual circumstances that confront the practicing physician. A few specific situations are discussed.

#### KETOGENIC DIET IN TREATMENT OF URINARY INFECTIONS OF CHILDHOOD

Henry F. Helmholz, Rochester, Minn. (Journal A. M. A., Oct. 15, 1932), states that by the use of the ketogenic diet the urine can usually be rendered bactericidal when its pH is below 5.6. The bactericidal power apparently is not due to acidity alone or to the presence of diacetic acid or sodium diacetone. Acidity in synergy with substances hitherto not yet determined probably accounts for this bactericidal action. Ketonurine (condition of the urine after the administration of a ketogenic diet) of a pH of 5.5 is an excellent antiseptic for clearing urinary infections, and ketonuria should prove useful in the preparation of patients for operation on the urinary tract. By means of the ketogenic diet three patients with major urinary anomalies have been freed from infection. At the Mayo Clinic no other method of treatment has been successful in this type of case. The clearing of an infection by means of the diet does not necessarily mean permanent cure.

#### NEUROLOGIC FEATURES OF PERNICIOUS ANEMIA

Richard H. Young, New York (Journal A. M. A., Aug. 20, 1932), presents an analysis of the neurologic aspects in patients with pernicious anemia who have been admitted to the Peter Bent Brigham Hospital from its opening in 1913 to January, 1931. In this series of 515 cases there were 103, or 20% of the cases with well defined cord changes marked by reflex changes and ataxia. The incidence would have been much higher if lesser changes of the nervous system had been included. From his observations the author concludes that the associated lesions of the central nervous system in pernicious anemia may present a variegated symptomatology and may be disseminated in location.



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## CHRONIC INDIGESTION

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There is perhaps no group of symptoms regarding which there is more misapprehension among physicians than symptoms arising from the stomach or felt in the region of the stomach.

There is no distinct disease entity known as "chronic indigestion." The syndrome of true gastritis occurs so rarely that it may safely be forgotten by all save specialists in gastro-intestinal diseases.

If one learned by simple statements rather than by an elaboration of those statements, this article would be complete in the single sentence: "There is no such thing as chronic indigestion." As this is not true and as there is a crying need for the early recognition, the accurate diagnosis, and sane, logical treatment of those conditions long neglected and belittled by the application of the misnomer "chronic indigestion," we are submitting this paper in the hopes that it may, in its small way, tear aside this shrouding term and awaken the practitioner to the underlying pathology, often of serious nature.

It is not that we expect to make any epical disclosures or revolutionize the study of medicine by new discoveries. We wish only to recall to mind, in a timely review, that which every physician knows or has known; so that by repetition we may keep before our minds the fact that vague gastro-intestinal symptoms are worthy antagonists and deserving, in every case, of exhaustive measures of diagnosis.

"Indigestion" is a much abused term commonly used to cover all forms of stomach disease. Strictly it means the non-digestion of food. This is a rare event among those who are not seriously ill.

That digestion may fail in the stomach or in some part of the alimentary canal or that some parts of the food may escape digestion is common enough, but the human organism is provided with compensating mechanisms, so that if one organ in the digestive system fails to perform its duty, another is usually capable of taking its place. Digestive ferments are not often lacking, and there is rarely a rational indication for prescribing artificial ferments to supply a lack in the normal action of these organs, except dilute hydrochloric acid.

Formerly it was a favorite custom to explain the belching of gas from the stomach and the flatulent distention of that organ, as also the "sour" stomach, by saying these symptoms arose from the fermentation of food. Such an explanation gave rise to attempts to suppress fermentation by giving a host of intestinal antiseptics of varying degree of germicidal power. Fermentation does rarely occur in the stomach, however, ordinarily the formation of gas is slow and quite insufficient to account for the belching that many patients experience. In the majority of cases the gas present in the stomach consists of swallowed air. As a rule, even in cases in which much distress is produced by flatulence or belching, there is no fermentation in the stomach. The acid present in the stomach contents is seldom the results of fermentation but is produced by over-secretion of the gastric juice. It is essential; therefore, to ascertain the true origin of these symptoms before attempting to prevent them by the administration of injurious antiseptics.

However, the evil is usually not in the injuriousness of the medication so much as that treatment has been offered more or less empirically with no more than a cursory attempt at diagnosis. Once a patient is labeled dyspeptic he is disposed of with prescriptions for alkalies or digestants and promptly forgotten.

Diagnosis on the basis of the patient's

recital of symptoms without physical examination or the analysis of gastric contents or X-ray series is much too common. It may be said at the outset that there exists scarcely a symptom that is characteristic of any definite stomach disease. This may explain the readiness with which practitioners resort to such terms as "indigestion," "dyspepsia," "catarrh of the stomach," or the equally indefinite term, "stomach trouble" as a diagnosis.

While the existence of serious organic disease should never be overlooked, it is well to understand that only a small proportion of patients who come to the physician complaining of the stomach or of digestive disturbances have ulcer or cancer. The physician should not make or suggest a diagnosis of serious disease until he has proved its existence by appropriate physical and laboratory examinations, reserving them as potential possibilities until proven otherwise.

It should always be borne in mind that the stomach has important nervous connections with other organs by which it reflects, like a mirror, events taking place in other parts of the digestive system. Symptoms arising in the stomach may, in reality, depend on disease of the liver, gall-bladder, appendix or large bowel. Neighboring organs not connected with the process of digestion or even remote organs may produce a reflex disturbance in the stomach.

An attempt to group together in a comprehensive classification, all conditions which may secondarily give rise to gastro-intestinal symptoms would lose its clarity and usefulness defeating its purpose through its very volume. While the classification presented can in no way be considered complete; it is a list of the conditions most usually encountered and which we entertain in mind while examining each patient with gastro-intestinal symptoms, ruling out or verifying each syndrome complex until a definite diagnosis is reached during the course of the examination:

I. Those intra-abdominal lesions most commonly giving rise to "dyspeptic" symptoms:

1. Cholecystitis.
2. Peptic Ulcer.
3. Gastro-Intestinal Malignancies.
4. Colitis.
5. Appendicitis. (Chronic).

II. Those extra-abdominal conditions prone to give rise to "dyspeptic" symptoms and usually requiring a gastric analysis to confirm or strengthen the diagnosis.

1. Pernicious anemia.
2. Pellagra.
3. Sprue.
4. Combined systemic disease.

III. Those unrelated conditions with "dyspeptic" symptoms as occasional secondary manifestations.

1. Acute infections.
2. Chronic infections, especially tuberculosis.
3. Circulatory and renal diseases.
4. Metabolic diseases.
5. Diseases of the genital organs.
6. Diseases of the C. N. S., functional and organic.

The intestinal symptoms of the last two groups, especially of the latter are but secondary minor manifestations and the diagnosis is usually apparent. Those in the first group call for careful differentiation.

Each of the conditions listed may give the identically same vague symptoms of gas, eructation, and belching, slight nausea and even vomiting. Pain may vary in its distribution. It may vary in its severity or in its interpretation by the patient from a sense of epigastric fullness or oppression, to intense cramp-like seizures or unbearable boring dull pain. An hysterical patient may make mountainous complaints of slightly exaggerated peristaltic movements while a plethoric minded individual with peptic ulcer and undoubted pain make but slight and passing comment of abdominal discomfort.

The relation of pain to food and hunger is of extreme importance and may be beautifully typical in peptic ulcer but can, too frequently, be confusing or lacking in definite ulcer or present in unrelated conditions.

Relief of pain by the ingestion of soda would indicate the presence of a condition associated with hyper-acidity and thoughts turn first to ulcer. However, one of our patients, and this is by no means unusual, had been taking soda by the advice of a physician for the past twenty years with varying degrees of sense of relief. Gastric analysis showed a complete lack of hydrochloric acid in both the fasting contents



and after a test meal. For twenty years physicians had been attempting to neutralize an acidity which did not exist. Twenty of the most valuable years of a patient's life were spent floating from physician to physician and from alkali to alkali. For twenty years the full realization of the patient's economic possibilities were more or less hindered while ten minutes

work with the stomach pump and tube would have shown us that at least our medication was contraindicated.

We have herein presented the twenty-eight cases, in the order in which they presented themselves for examination, during the period from November, 1931, to May, 1932.

Hosp. No.	Sex	Age	Tetra Iodide G. B.	Gastric Analysis	X-ray Findings	History	Final Clin. Diag.
S. S. B. 4230	F.	62	Normal	Normal to high	Spastic Colon	Gas, Eructation, Burning lower abdominal pain.	Spastic Colitis
W. J. D. 4184	F.	—	Normal	Achlorhydria	Spastic Colon	Flatulence, pain of distention.	Spastic Colitis
R. H. C. 4192	M.	—	Normal	Normal	Atonic Colon	Constipation	Atonic Constipation
C. D. D. 4132	F.	42	Normal	Hyperacidity	Doudenal Ulcer	Typical Ulcer History.	Peptic Ulcer
P. M. S. 4212-4213	F.	40	Pathological	Hypoacidity	Pathological G. B.	Repeated attacks R. U. Q. pain, Jaundice fever for one week.	Operation — Pericholecystic abscess obstructing cystic duct and common bile duct.
S. J. W. 4215	M.	39	Normal	Hypoacidity	Indeterminate Rapid Stomach emptying time.	Three months distention without pain, nausea, vomiting relief by defecation.	Hypochlorhydria Gastrica.
J. M. M. 4040-4058	F.	43	Normal	Hyperacidity	Spastic Colon	Mucous stools thirty years. Typical ulcer with much gas formation.	Spastic Colitis
W. R. S. 4174-4175	M.	—	Normal	Normal	Colon spastic. Appendix segmented.	Typical ulcer history	Spastic Colitis Chronic Appendicitis.
W. H. J. 4199-4200	F.	49	Normal	Hypoacidity	G. I. negative. Liver shadow grossly enlarged.	Nine weeks weakness, pain and nausea.	Ca. Liver
T. G. 4118-4119	M.	38	Normal	Hyperacidity	Colonic Stasis. Rapid Stomach emptying.	Two months sharp epigastric pain. Dietary indiscretion.	Hyperacidity
E. H. 4231	F.	28	Normal	Normal	Delayed stomach emptying.	Burning epigastric pain. Recurrent attacks acute appen.	Chl. Appenedicitis
R. L. C. 4160	M.	38	Normal	Hyperacidity	Indeterminate	Epigastric discomfort.	Hyperacidity
P. Y. 4168	F.	—	Normal	Hyperacidity	Rapid Stomach emptying.		Hyperchlorhydria
E. P. 4209-4210	M.	43	Pathological	Hypoacidity	G. I. negative. G. B. pathological.	Acute R. U. Q. pain with shock jaundice.	Chronic cholecystitis
E. D. P. 4219-4225	M.	37	Normal	Normal	Doudenal scar with deformity of cap	Typical of Ulcer.	Duodenal Ulcer
L. C. T. 4166	M.	—	Normal	Normal	Negative	Negative	Chronic Appendicitis
H. B. 4148	M.	48	—	Normal	Colon-filling defect.	Severe pain and L. L. Q. tenderness.	Ulcerative Colitis.
W. H. D. 4143-4144	M.	62	Pathological	Achlorhydria	G. I. negative.	Seven weeks "flu" progressive jaundice without pain. Gas, distention.	Ca. head of pancreas
H. C. G. 4129	M.	39	—	Normal	Rapid stomach emptying.	Typical Chronic Ulcer history for years.	Chronic appendicitis
J. C. C. 4044	F.	—	Normal	Hyperacidity	Ulcer lesser curvature colonic delay.	Typical Ulcer history 1 to 2 years.	Gastric Ulcer
W. T. W. 4045-4046	M.	66	Pathological	Hyperacidity	G. B. pathological. G. I. series inadequate.	Failing health 10 yrs. Cramping pain three weeks. Blood in his stools.	Gastric Ca.

Hosp. No.	Sex	Age	Tetra Iodide G. B.	Gastric Analysis	X-ray Findings	History	Final Clin. Diag.
H. T. G. 3997	M.	32	Normal	Normal	Ulcerous Area pylorus.	Two weeks typical ulcer, history of much liquor.	Gastric Ulcer (Alcoholic).
F. N. K. 3851	M.	40	Normal	Hyper-acidity	Ulcer of stomach.	Twelve years seasonal ulcer history with hematemesis.	Gastric Ulcer
H. W. B. 3859	M.	66	Normal	Achlor-hydrria	Filling defect of stomach	Three months signs of obstruction with epigastric mass.	Gastric Ca.
D. A. P. 4043	F.	28	Normal	Hypo-acidity	Colonic Stasis.	Six weeks R. U. Q. pain referred to scapula hunger pain.	Hypochlorhydria Functional Constipation.
K. P. 3875	M.	37	Normal	Hypo-acidity	Gastroenterostomy.	Twelve years ulcer history.	Duodenal Ulcer
R. R. T. 4014-4016	F.	69	Normal	—	Colonic Stasis Ileocecal incompetence.	Gas R. L. Q. pain several years.	Chronic appen.
J. J. D. 4076	M.	40	Normal	Hyper-acidity			Hyperchlorhydria

The following general statistics gleaned from this study may be of passing interest:

Women are most usually thought of as the "complaining" sex and are more able to spare time in which to be sick. However, only 39.3% of our patients were females and 60.7% males.

In the twenty-one who showed no reticence as to age; the average age was forty-five years with no patient younger than twenty-eight or older than sixty-nine presenting themselves for examination.

This group does not include or take into consideration those cases of typical acute and chronic appendicitis admitted and operated after a mere history and physical. Many of these, however, gave a long past history of gastro-intestinal disturbances of slight nature.

Many of these cases were suffering from more than one condition so that our total listed will be greater than 100%. Six cases or 21.4% showed a colitis, three of which suffered from marked constipation. Six cases or 21.4% gave X-ray evidence of peptic ulcer which was borne out by the clinical findings. Three cases or 10.7% were cases of cholecystitis. Five cases or 17.8% had chronic appendices. Four cases or 14.2% showed hyperchlorhydria without demonstrable cause.

Fully 50% of these diversified conditions had been indiscriminately treated with soda.

It can be seen also that the symptoms

listed as "typical of ulcer" are symptoms, not of the ulcer *per se*, but of the disturbed gastric acidity.

In these cases we have not considered hyperchlorhydria and hypochlorhydria as a distinct disease entity; but rather as a demonstrable symptom of some underlying disease complex. In those cases in which we have been unable to attribute the secretory disorder to any organic lesion, and in which we have been unable to locate any pelvic, toxic or extra-abdominal lesion, of which it may be a reflex manifestation, we have hesitantly labeled as of psychogenic origin and purely functional.

The symptoms presented are due to the disturbed secretion. These are combatted with diet, alkalies or dilute hydrochloric acid as the case demands and the patient's symptoms relieved. The patient, however, is not dismissed from mind, but is watched for the appearance of any condition of which the secretory disturbance may have been a forerunner.

It may be well to recall that hyperacidity and especially hypoacidity show a familial tendency and may long be present without symptoms. This is particularly true of families in which pernicious anemia has appeared. Hypochlorhydria may have been noted long years before the manifestation of anemia; and, as is often the case other members of the family may show a hypochlorhydria with or without apparent symptoms.

The ideal routine of examination is that



of the methodical specialist and should contain the following:

1. Meticulous history.
2. Complete physical examination.
3. Gall bladder series after tetra-iodide administration.
4. Gastric analysis of the fasting contents and after a test meal.
5. Complete G. I. series.

After such a procedure, little of importance can escape our attention and the percentage of our mistakes are lowered to a minimum. Economic conditions and other circumstances may influence us to delete certain items of the above routine as unnecessary or superfluous in the individual case. But after all, where so much confusion is possible, are we ever warranted to give less than the best we have?

#### —○— FUNDAMENTALS OF ELECTROCARDIO- GRAPHIC INTERPRETATION

In a foreword to the first of a series of articles by J. Bailey Carter, Chicago (Journal A. M. A., Oct. 1, 1932), on the fundamentals of electrocardiography interpretation the editor of The Journal points out that electrocardiography has been gradually establishing a place for itself in clinical practice. Nevertheless, a large number of physicians have not been able to develop a working knowledge of the subject. For this reason The Journal presents a series of articles outlining the fundamentals necessary to understanding it. In the preparation of this series, various other contributions on the subject were consulted and the statements of authors rewritten, rearranged or left practically unchanged to meet the requirement of simplicity and clearness. This is not a report of research. Instead, Dr. Carter has avoided the points that are still debatable. In the preparation of the material, Drs. Arno B. Luckhardt, Samuel R. Slaymaker, N. S. Davis III and L. N. Katz, Mr. W. B. Andrews and Mr. H. J. Holmquest have aided with suggestions and advice. The electrocardiograms and case histories have been developed from the collections in the Central Free Dispensary, Passavant Memorial Hospital and the Cook County Infirmary, and are from the departments of Dr. Samuel R. Slaymaker, Dr. C. C. Maher and Miss Myrtle Sands. It is realized that the vast majority of physicians are not in themselves possessed of the necessary apparatus for electrocardiographic studies. Nevertheless, such service is now available in many hospitals, clinics and laboratories. An outline of the presentation of this subject to be followed in this series of articles is given and, following an introduction to the general subject of electrocardiography the author discusses the following sub-headings: (1) the value of the electrocardiogram in clinical practice; (2) physiologic basis of electrocardiography; (3) origin and action of the heart currents; (4) electrocardiographic technique; (5) the process of electrocardiography; (6) artefacts and their origin; (7) waves of the normal electrocardiogram, and (8) individual wave changes.

#### THE DIAGNOSIS AND TREATMENT OF THE MORE COMMON ACUTE ABDOMINAL CONDITIONS ✓

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A great many lengthy papers have been written on the "acute surgical abdomen" in recent years. This emphasizes the importance of this subject and too much cannot be said about this common condition, met with so frequently in medical and surgical practice. The author has written somewhat in length on this subject, the article appearing in the State Journal of February, last year. In today's paper I have made no attempt to discuss the subject in a general way, but instead I propose to discuss some of the common acute abdominal conditions in the order of their frequency.

I shall take up first the subject of acute appendicitis. A study of this condition in a large series of cases shows some interesting facts:

1. As long known, it is a disease of adolescent and early adult life, 68% of the cases occurring between the ages of 10 and 30. A fact not always appreciated is that it occurs more frequently in children under 13 years than in any decade over 40.

2. A study of the time interval between the onset of symptoms and hospital admission averages between 3 and 4 days. This long interval between the onset and admission is due either to the failure of the patient to call a physician, or to the failure of the physician to make a diagnosis, or to the refusal of the patient to submit promptly to surgical treatment after diagnosis has been made, or, finally, to the desire of the physician to treat the condition medically.

3. Further study reveals that 27% have had previous attacks, 72% being hospitalized in their first attack. When statistics reveal that almost 40% of the cases of acute appendicitis have already perforated on admission to the hospital, we realize the danger of treating expectantly either the first or subsequent attacks in the hope that they will subside.

4. Considering the mortality rate in chronic cases and acute unperforated cases it is not <sup>Pro</sup> more than 1%. In cases with perforation and abscess formation, it is between 10 and 15%, and cases with

spreading or general peritonitis have a mortality rate around 50%. It is to be emphasized that it is the early diagnosis of acute appendicitis with which we are concerned and not the diagnosis after abscess or peritonitis has developed. ✓

Acute appendicitis is the most common acute abdominal condition which we see, and its very frequency warrants its serious consideration in the diagnosis of any acute abdominal condition. General abdominal pain in the early period of the attack occurs in 75% of the cases, but localized pain and tenderness in the appendiceal region occurs in 95% of the cases—pain being the most important single symptom of the disease. Nausea and vomiting are the next most constant symptoms occurring in 75% of the cases. It is to be emphasized that vomiting usually is not frequent; it consists of one or two attacks coming on soon after the onset and then ceasing until peritoneal irritation develops. Localized tenderness and muscle rigidity are dependent upon the relation of the inflamed appendix to the parietal peritoneum. They are usually present, but if the appendix is retrocaecal or deeply placed in the pelvis they may be absent. In such cases deep palpation may reveal the local tenderness and rectal examination may be of aid.

In children it is much more difficult. Neither the symptoms nor signs are so constant. The fever and leucocytosis are as a rule higher and the difficulties in eliciting localized tenderness are greater. In the absence of a diarrhea (important) an attack of abdominal pain with nausea, vomiting, fever and leucocytosis should be considered acute appendicitis until proven otherwise.

The errors in the early treatment of acute appendicitis are chiefly two. Most important, I think, is the attitude of the physician towards the disease. We find there is still a tendency to treat the disease expectantly in the hope that the attack will subside. Undoubtedly, many attacks do spontaneously subside; but it cannot be foretold that any given attack will subside. The dangers of good surgery as before stated is 1% or less, depending on the stage of inflammation.

Another error in the early treatment of the disease is due either to the failure of the physician to make the diagnosis or his lack of understanding of the so-called medical treatment of acute appendicitis.

The fundamental principle of this form of treatment, as you know, is rest or quietness of the G. I. tract. We know from clinical and experimental observation that an inflammation of the tissues or organs spreads less rapidly and is more likely to subside if the involved tissue or organ is at rest or quiet. For the intestinal tract rest is secured by withholding foods and fluids by mouth, by the administration of morphine and by withholding all purgatives. Not only is this of help in limiting the spread of inflammation, but it is also of great help in the formation of adhesions about the appendix so that if perforation does occur there will form a localized abscess rather than a general spreading peritoneal infection. It is a matter of record that one-third of the cases of acute appendicitis received an initial purge. Now the physician is not always responsible for this error, for it is common knowledge that patients will take purgatives without consulting or even against the advice of the physician. But, nevertheless, the administration of cathartics by physicians in acute appendicitis is not unheard of.

*Acute Cholecystitis* is next in frequency to acute appendicitis. It is a condition which may be unassociated with stone, but usually is associated with stones in the gall bladder, one or more of which temporarily or permanently occludes the cystic duct. When the symptoms and signs are typical, diagnosis is easy; but when atypical one must rely on experience and often we may help ourselves by the use of the X-ray. Gangrene and perforation occur more commonly in the old than in the young. The mortality rate for operation is no higher in the acute stage of cholecystitis—providing gangrene and perforation have not occurred—than when performed during a quiet interval. Therefore, in my opinion, it is best to operate these cases early because the mortality is high after gangrene and perforation have occurred.

*Acute Perforation of Gastric Duodenal Ulcer.* This condition is next in frequency to acute cholecystitis. A review of the histories of these cases shows that in about 80% there were symptoms dating from a period of three months to twenty years before perforation. In the remaining 20%, history was indefinite or no history of previous ulcer symptoms existed.

The picture of the acute perforation of gastric or duodenal ulcer is a sudden, intense pain in the epigastrium, followed in



half the cases by nausea or vomiting. If seen very early, there may be pallor and other symptoms of shock, or shock may be absent. The abdomen is rigid, more so than usually is seen in other acute abdominal conditions and it may even be retracted. There is abdominal tenderness more marked in the upper half of the abdomen. The temperature is normal or subnormal. The pulse is moderately accelerated and the leucocytis increased. Later, with spreading peritoneal infection, the abdomen distends, leucocyte count drops and pulse accelerates. The diagnosis is usually made in 80% of the cases. The most common error is in confusing perforated ulcer with acute appendicitis, next acute cholecystitis, acute pancreatitis, lead colic and small strangulated ventral hernia in order of frequency.

The importance of early diagnosis and prompt surgical treatment in no other condition is better illustrated by a study of mortality rates considering the time interval between perforation and operation. In cases operated upon within the first twelve hours the mortality rate is about 20%, while in those cases operated between twelve and twenty-four hours after perforation the mortality rate climbs as high as 70%.

*Acute Intestinal Obstruction.* This condition occurs fourth in frequency in the diagnosis of acute surgical abdomens. As we see this condition clinically we may conveniently classify the patients who present its symptoms into two groups:

1. Those who are admitted to the hospital primarily for this condition.
2. Those who develop the condition in the hospital following operation for some other surgical disease.

Acute intestinal obstruction in the first group follows a variety of causes, such as adhesions or bands, the result of previous operations, strangulated hernias, intussusception, volvulus, tumors of the intestine enterolith, tuberculous peritonitis, Meckel's diverticulum and internal strangulated hernia in order of frequency.

High intestinal obstruction is one of the varieties in which errors in diagnosis are prone to occur. The symptoms are intense cramp-like pain, vomiting, a normal or a subnormal temperature, accelerated pulse and leucocytosis. The abdomen may fail to present even a slight distention and palpation may be negative. Efforts to evacuate the bowels will in all probability be

successful for twenty-four or forty-eight hours because the enemas empty the bowel below the high obstruction, so don't let this mislead you. The confusing elements here are the absence of abdominal distention and the pseudo bowel movement. A great aid in the diagnosis of these high type cases is fluoroscopy of the abdomen giving barium by mouth. The barium will be seen passing through the pylorus and stopping at the obstructive point in the duodenum or upper jejunum, the point of obstruction.

It is evident that the mortality in this disease is dependent on the time element between onset of symptoms and operation, just as it is in acute perforation.

About the second group of cases, those that develop symptoms of obstruction in the hospital following surgical procedures.

The obstruction may be mechanical and incomplete or complete, or it may be due to paralytic ileus.

As before stated the author made no attempt to discuss all of the conditions which might produce an acute surgical abdomen, but instead confined himself to the four most common causes met with in the order of their frequency. [In closing allow me to quote the closing paragraph in a prior paper of mine on this same subject.

Acute abdominal conditions as a rule are always urgent and there must be little delay in these cases. I think one should never wait longer than a few hours. The patient should be placed where immediate operation can be done if necessary. In the few cases where a positive diagnosis has not been thoroughly established and the patient's condition fails to improve, exploration is indicated in the hope that the condition will be discovered and treatment instituted. We know that early operation often saves a life when in all probability delay would prove fatal.

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#### DRIED LACTIC ACID MILKS AS A LONG CONTINUED DIET FOR INFANTS

Because of their inability to find references in the literature regarding the subject, Julius H. Hess, I. McKy Chamberlain and Louis S. Robins, Chicago (Journal A. M. A., April 9, 1932), started a comparative feeding study with the hope of evaluating the effect on growth and development of infants following long continued feeding with dried lactic acid milks. The clinical results indicate that dried lactic acid milks can be used under the same conditions as cultured sweet milk and cow's milk plus U. S. P. lactic acid.

## X-RAY THERAPY IN GRAVES DISEASE

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Experience has taught us that the X-ray is of no great value in the treatment of colloid and adenomatous thyroids although a few of the latter have been exposed to the rays and apparently benefitted. The exophthalmic syndrome however is definitely radio-sensitive and for this reason a short discussion of the disease is in order.

For one of the best definitions of exophthalmic goiter we are indebted to Dr. Israel Bram of Philadelphia. He states that this condition is a chronic (rarely acute) neuro-endocrine dysfunction, characterized by an increased metabolism, excessive appetite, loss of weight, emotionalism, tremor, persistent afebrile heart-hurry, weakness, dermatographism and usually, though not constantly, a hyperplasia of the thyroid and exophthalmos.

In regard to diagnosis, I am reminded of Dr. A. E. Hertzler's article, "A Country Doctor Takes A Look At Stomach Complaints," in which he states that a physician should be able to make ninety per cent of his diagnoses in his B. V. D's. I feel that any doctor here tonight armed with Dr. Bram's definition and clothed in the manner just described could make a diagnosis of the type of goiter in question. In borderline cases however we can always make use of the basal reading, the Goetsch test, cinchona tolerance of Bram and voluntary apnea test of Bartlett.

The etiology of Graves disease is obscure but in general we may say that the condition occurs in both sexes, at all ages, and in almost every clime. Heredity seems to play a part in about 10% of the cases.

Graves disease is seen most often during periods of greatest sexual or adult activity. For every male case one sees about four females. Accounts of worry and emotional upsets are common in the histories of many cases of Graves' disease.

Another striking fact is that many of these patients date the onset of their nervousness and emotional instability from a preceding infection.

There are numerous theories regarding the pathological physiology of this disorder but to me the neuro-endocrine dysfunction and imbalance of the vegetative nervous system as set forth by Bram,

Sajou, et. al., is the most plausible. The primary cause of this dysfunction and imbalance is at present unknown but most investigators feel that infectious foci, if not the exciting cause, at least aggravate the syndrome by their presence.

The gland in Graves disease presents the pathological picture of hyperplasia. Macroscopically the organ is usually increased in size but this finding need not be present in many typical cases. In other words there is no etiological relationship between the size of the gland and the severity of the syndrome. The enlargement when present is usually symmetrical. The surface is smooth, but a cut section presents a homogeneous structure not seen in ordinary parenchymatous goiter, with little or no visible colloid. There is an increase in the number and size of blood vessels. Microscopically there is an infolding and crowding of the cells upon the acinar spaces; an increase in the number and size of the cells; an increase in the number of alveoli and a diminution of alveolar colloid and its contained iodine (Bram).

In the majority of instances there is a persistently enlarged thymus gland. Kocher found enlarged thymus in fifty per cent of his cases; Blackford in a study of 74 autopsies, found that in all subjects under forty years there was a persistent thymus. Outstanding authorities now irradiate the thymus in all cases of Graves disease. This is of great moment in post-operative cases suffering a recurrence of symptoms. Bircher in 1923, by transplanting particles of the thymus gland of patients suffering from Basedow's disease, was able to produce typical Basedow's disease in dogs.

Before enlarging on the subject of X-ray therapy I wish to quote Bram to the effect that, "Graves disease is not a pure hyperthyroidism, but a widespread affection, the predisposition to which is probably congenital." He states further that, "the rationale of both surgery and roentgenotherapy depends upon the theory that Graves disease is a pure hyperthyroidism." Thus the surgeon cuts out the supposed offender while the roentgenologist brings about the same result by the more subtle method of bombarding the gland with X-rays of extremely short wave length. Either method or a combination of both is considered good therapy at the present time. We must admit with Bram, however, that both methods are



only constituents of a broad regime of non-operative therapeutics.

Our method of applying the X-ray consists of crossfiring the gland through two to seven different skin areas, depending on the size of the organ and the severity of the symptoms. This series is usually administered at one sitting and is repeated every ten days until the basal reading drops to and remains in the neighborhood of  $+15$ . For the information of any radiologists present the exact set up is as follows: 5 milliamperes, 135 kilovolts or about a 9 inch gap, 10 minutes exposure time over each skin area with a 6 millimeter aluminum filter and a target skin distance of 10 inches. The energy is developed by an oil-immersed transformer with a rotary rectifier and is controlled by an autotransformer unit. In blonde individuals one thickness of sole leather is used in addition to the 6 millimeters of aluminum.

Each skin area is carefully marked with an indelible pencil and leaded off. The size of the skin area is varied to suit the case but ranges between three-fourths of an inch to two inches. The smaller the skin area the more opportunity for cross-firing and as a result the greater the depth dose. Small skin areas which are close together are heavily shielded with quarter inch lead and an area about one foot square is protected with lead one-sixteenth of an inch thick. The body from the neck down and any visible portion of the scalp is covered with lead rubber. We feel that this amount of protection is very essential when the operator is using heavy cross-fire on such a small area as the thyroid. In our opinion the operator should not put too much faith in the ordinary lead glass bowl in thyroid therapy.

As a protective measure against telangiectasis from two exposures inadvertently given over one skin area an indelible dot is placed in the center of the exposed area just before throwing the X-ray switch.

The time of exposure is controlled by two interval timers and the observers watch.

The thyroid in Graves disease is especially sensitive to heavy cross-firing with the above or similar technique. The rays probably destroy the gland by an atrophic action on the cells *per se* and by producing a swelling of the T. intima of the capillaries and terminal arterioles. The capillar-

ies and terminal arterioles finally become obliterated and portions of the gland degenerate from lack of blood supply. Some observers have also noticed a round cell infiltration and later a moderate degree of fibrosis. Secretion of the gland is diminished early probably because the secretory cells are first affected. Next there is a gradual atrophy of the gland with a decrease in size of the neck circumference.

A decrease in nervous symptoms is usually the first clinical evidence of improvement and may be observed as early as three weeks or as late as two months, depending apparently on the vascularity of the gland. Large pulsating growths with a shrill bruit on auscultation are especially slow to respond. As the nervous manifestations improve the patient begins to show some gain in weight. The tachycardia as a rule diminishes very slowly. Glandular enlargement and exophthalmos are usually the last symptoms to leave and the latter is often permanent.

An X-ray "cure" often requires six to eighteen months but the patients are usually able to work all through the course of treatment. In fulminating cases rest in bed between exposures is a valuable aid in the therapeutic regime.

In regard to the choice of treatment we feel that each individual case may possibly, but not always, require the services of an internist a roentgenologist and a surgeon, in the order named, before permanent remission takes place. Bartlett in Radiology, March, 1932, speaks of permanent stabilization of these patients rather than cure and urges closer cooperation between the internist, radiologist and surgeon in an effort to bring about this permanent stabilization.

Statistics seem to show that surgery alone and radiology alone produce about the same percentage of the so-called cures. For this reason it seems logical that radiology should always precede surgical intervention. It should be used instead of superior pole ligations and should be used long enough to show either failure or success. Success is usually the rule. Williams reported 200 carefully controlled cases in Radiology for March, 1932, with 80.5 per cent cures. Twenty-seven cases or 13.5 per cent were improved, making a total of 94 per cent either cured or improved. Eight cases or 4 per cent recurred after one year. Five of these were re-treated and cured. Only two cases developed sub-

thyroidism and only one had telangiectases.

Surgery at times produces occasional patients with a combination of subthyroidism and Graves disease super-imposed and the same is true of X-ray, but to a lesser degree. Dr. Bram, in Archives of Physical Therapy for September, 1932, reported a case of thyroidless Graves disease from X-ray exposures.

According to Walter, Anson and Ivy, Radiology, January, 1931, the parathyroids are apparently immune to therapeutic X-radiation. Pfahler in Radiology, May, 1932, states that none of his cases have ever developed tetany after X-ray therapy.

Menville in Radiology for March, 1932, quotes Soiland, Costolow and Meland to the effect that reports from prominent surgeons and pathologists have discredited the belief that irradiated thyroids are more difficult to operate. They say that difficult operation is often met with in cases in which there has been previous thyroiditis with fibrosis and that it is impossible for the surgeon and pathologist to pick out cases which have had previous irradiation.

#### REPORT OF CASE

Mrs. W. M. L., age 43, first came to the office November 9, 1930. History was irrelevant except for the fact that she had recently suffered an attack of "flu." She stated that in spite of an excellent appetite she had been losing weight and was very weak, especially in the knees, when climbing stairs. Her heart bothered her by beating too fast on the slightest exertion and she complained of swelling of the legs below the knees. She also complained of increasing nervousness and irritability and the passage of large quantities of urine. (Urinalysis negative to routine examination). Physical examination revealed an apparently undernourished woman of about stated age. She was very nervous and jumped at the slightest sound or unexpected movement on the part of the observer and was continually moving some part of her body. The eyes gave the impression of great fear. Pupils were widely dilated but reacted to light and accommodation. The sclera was visible between the upper lid and pupil. The neck presented a very pulsatile enlargement of both lobes and isthmus of the thyroid, the left lobe being visibly the largest. There was a bruit on auscultation. Observation of the

hands revealed a marked tremor. Heart rate 120 per minute, pulse synchronous, temperature 98 degrees, respiration 20. Auscultation revealed no shocks or murmurs. Blood pressure 150-60, pulse pressure 90.

The patient reported for a basal metabolic reading November 11, 1930. Her weight was 120 pounds without clothes, pulse 110 per minute and respiration 20. Her basal reading was plus 57. From December 5, 1930, to March 16, 1931, she received seven series of exposures of the technique described above and on March 16, 1931, her weight was 138 pounds and pulse was 100. Patient was so much improved she stopped treatment of her own volition and stated she did not even want a basal metabolic reading.

Following this the patient left town and did not return until January 4, 1932. She complained of all her old troubles. Her weight however was 137 pounds, pulse 100, and the pulsating tumor was no longer visible in the neck. Her basal reading was plus 45. From January 4, 1932, to April 16, 1932, she was given ten series of exposures at intervals of ten to fourteen days. Basal reading March 19, 1932, was plus 42. On April 16, 1932, we decided patient was stabilized and advised another basal reading which the patient refused. Patient was not seen again until October 21, 1932, at which time she stated she was feeling fine. Her weight was 135, pulse 85, and blood pressure 120-80. We would like to call attention to the pulse pressure which at instigation of treatment was 90 and now is 40. Patient submitted to basal reading, November 2, 1932, which was plus 16. Weight was 142 pounds, pulse 92 and respirations 16.

On the basis of case reports in the literature and our own experience with this one case we are inclined to summarize with Holzknecht: "Only those patients suffering with Basedow's disease should be operated on, who do not respond to irradiation, cases with large struma, compression of the trachea, or very acute cases of Basedow's disease which do not respond favorably to irradiation."

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#### EFFECT OF KNEE-CHEST POSITION AND POSTURAL EXERCISES ON POSTPARTUM RETROVERSION

Goodrich C. Schauffler, Portland, Ore. (Journal A. M. A., Aug. 27, 1932), put alternate patients (odd numbers) in a group of 169 deliveries on knee-chest position and postural exercises, whereas alternate patients (even numbers) were not given such measures. Examination after six weeks revealed a substantially higher incidence of postpartum retroversions in the group subjected to the so-called corrective measures. The authors believe that it is fair at least to conclude that the use of such exercises does not justify the confidence that has been placed in them. It seems wise even to seek for factors in the use of such exercises that may actually retard the tendency toward involution and return to the normal anterior position.

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#### FORCED SPINAL DRAINAGE IN ITS RELATION TO INFECTIONS OF THE CENTRAL NERVOUS SYSTEM

George M. Retan, Syracuse, N. Y., (Journal A. M. A., Sept 3, 1932), used forced spinal drainage in twenty-one cases of various infections of the central nervous system. In four autopsies in cases of septic meningitis no hydrosis of any organ was found. There was evidence of a washing of fluid through inflammatory areas. Products of inflammation were washed from the depths of affected areas. The field of greatest usefulness for forced spinal drainage was in diseases of the central nervous system characterized by perivascular round cell infiltrations. Forced spinal drainage was shown to be a safe procedure. Over two thousand hours of treatment have produced no alarming symptoms.

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#### STREPTOTRICHOSIS

From their review of the literature and the observation of a case of streptotrichosis, Maurice Kovnat and Cornelius Mezei, New York (Journal A. M. A., Dec. 10, 1932), conclude that streptotrichosis, in both acute and chronic forms is probably more common than is generally believed. The etiologic factor is a branching mold, very pleomorphic botanically, but showing a typical pathologic entity. The chromogenic granules are so pathognomonic that their presence alone—easily detectable macroscopically—determines the diagnosis of this disease. The case reported by them shows the typical, clinical course of acute pulmonary form of the disease which followed on the ulceration and removal of a chronic skin nodule of the same etiology. The possibility of a relatively innocuous skin lesion harboring virulent micro-organisms should not be overlooked.

#### USE OF IODIZED OIL IN DIAGNOSIS OF CHRONIC MAXILLARY SINUSITIS\*

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The use of iodized oil as an aid in diagnosis of chronic maxillary sinusitis has been more or less used since 1926. During that year Fraser<sup>1</sup>, Goodyear<sup>2</sup>, Proetz<sup>3</sup>, and MacCready<sup>4</sup>, reported a series of cases with their observations after injection of lipiodol into the nasal accessory sinuses. Many papers have been published within the past few years by both rhinologists and roentgenologists advocating its use.

I do not believe this question has been definitely settled as yet, although in the majority of cases of chronic maxillary sinus involvement, the injection of opaque oil will usually show a filling defect, if antrum is diseased, which shows up on operation to be a thickened diseased membrane.

The diagnosis of chronic maxillary sinusitis is difficult, an ordinary roentgenogram of the sinuses usually show very little, cloudiness of one or both sides may be due to position of patient's head or a thickened bony wall of the antrum. Transillumination of the sinuses is not reliable although a valuable aid. Irrigation of the antrum may or may not show pus.

Given a case with evidence of focal infection, whose complaint is headaches, vague pains in face, or bronchial cough, the ordinary roentgenogram of the sinuses is not enough, the picture may show some changes, but as a rule will leave us in doubt. Filling of the antrums which requires very little additional effort and is practically painless will clear up the diagnosis in the majority of the cases. Simon<sup>5</sup> rules antroscopy superior to other methods of diagnosis of maxillary sinusitis. I have had no experience with this method, although I believe this is another important step in diagnosing this condition.

He says. "One must become accustomed to recognizing the changes in the mucous lining of the sinus, regardless of how well he knows the anatomy of the nose and the paranasal sinuses, this ability to recognize the changes will be acquired only by train-

\*Read before the Section on Eye, Ear, Nose and Throat, Oklahoma State Medical Association, May 25, 1932, Tulsa, Oklahoma.

ing and experience in seeing sinus mucosa."

Osmond<sup>6</sup> in a paper read before section on radiology in Philadelphia, June, 1931, says, "The rhinologists have received much assistance in the diagnosis of sinus disease since the roentgenologists have been making sinus examinations before and after the injection of iodized oil. Such roentgenograms detect thickening of the membrane lining the sinuses, and indicate the degree of thickness of the hyperplastic tissue, moreover, certain indentations and irregularities indicate the presence of polyps."

A complete history is essential in these cases, as Proetz has shown filling defects in a number of allergic patients after injection with iodized oil. Goodyear<sup>7</sup> has shown filling defect one week after an acute coryza.

The injection of oil should be delayed if either of these two conditions are present until after the height of the attack.

I have been making a practice of injecting oil in the maxillary antrums if there is a question of a chronic involvement, for the past year and a half, and I am convinced that it is one of the major points in the diagnosis. This procedure used in conjunction with other diagnostic aids at hand will save many operations on normal antrums.

According to Proetz<sup>8</sup> in the case of the normal sinus, the oil shadow conforms closely to the bone shadow. There should be a thin even line of light between them. The normal sinus mucosa varies in thickness from .5 mm. to 1 m.

#### CASE REPORTS

*Case No. 1.* White male, aged 35.

*Present complaint:* Post-nasal drip-recurrent head colds, recurrent attacks frontal headache, loss weight, and cough.

*Transillumination.* Right maxillary and frontal transilluminated well. Left, faint transillumination through maxillary, filling with iodized oil shows a marked filling defect on left side.

Right antrum retained 19 cc's oil—left 4 cc's oil. Left Caldwell-luc was done, with relief from symptoms. Left antrum was found to be filled with a large, thickened, cystic membrane.

*Case No. 2.* White male, aged 32. Referred for check-up sinuses.

*Present Complaint:* Pain in right arm and shoulder.



Normal filling—postero-anterior position—patient lying on face. Proetz advocates the partial filling and the horizontal beam. He has amply demonstrated no sinus can be filled above its normal ostium.

Tonsillectomy done five years ago. Examination revealed large tonsillar tags in both sides. No transillumination through either maxillary antrum. Frontals transilluminated well. Filling with iodized oil disclosed no filling defect. Right antrum retained 19 cc's, left 20 cc's oil. Removal of tonsillar tags brought about relief from his symptoms.

*Case No. 3.* White male, aged 41.

*Present Complaint:* Post-nasal drip (foul smelling) for past five years. Occasional headache. Sinuses transilluminated well. Filling with iodized oil shows no defect on right, left does not appear completely filled. Right antrum retained 20 cc's oil, left antrum retained 12 cc's oil. Patient refused operation. Instillation of .5 per cent ephedrin solution by displacement, after method of Proetz was resorted to, so far four irrigations have been given with some improvement. A filling defect is seen on floor of left antrum. An intranasal window resection with removal of membrane from sinus floor would be indicated in this type of case.

*Case No. 4.* White female, aged 27 years.

*Present Complaint:* Severe headache, frontal type. Post-nasal discharge. Feel-



ing of general weakness and loss of weight. Has noticed present symptoms for past four or five years. Had operations on her left antrum three years ago.

*Transillumination.* Right antrum transilluminated well. Left, transillumination fair, pus on irrigation left. Iodized oil was injected into both antrums. Right antrum retained 20 cc's oil, left 5 cc's oil. Left shows marked filling defect. Left Caldwell-luc was done. Antrum found to be filled with a thickened membrane and large amount of polyps.

*Case No. 5.* White male, aged 39 years.

*Complaint:* Recurrent head cold. Pain at times over right side of face. Post-nasal drip and recurrent headache. Transillumination. Both antrums transilluminate well. Iodized oil was injected into both maxillary antrums. Right antrum retained 13 cc's oil. Left antrum retained 19 cc's oil. Right antrum shows a filling defect confined to the floor.



Right antrum shows a filling defect confined to the floor.

An intra-nasal window resection was done on right antrum and a thickened membrane was removed from the sinus floor. Marked improvement was noted in his condition.

*Case No. 6.* White female aged 53 years.

*Complaint:* Pain over left side of face,

post-nasal dripping and continuous head cold. Symptoms noticed for past two years. Both antrums were injected with iodized oil. Right antrum 21 cc's oil. Left antrum retained 12 cc's oil and shows a marked filling defect. A malignancy must be thought of in this case. Patient refused operation.

*Case No. 7.* Shows a normal filling, five days following an acute coryza. Antrum retained 23 cc's oil and shows no filling defect.

*Case No. 8.* White male, aged 31 years.

*Complaint:* Nasal obstruction, attacks sneezing, post-nasal dripping and occasional asthmatic attack. Examination showed both nostrils filled with polyps. Iodized oil was injected into both antrums. Right antrum retained 13 cc's oil. Left antrum retained 16 cc's oil. A ragged filling defect was found on both sides. Removal of nasal polyps and bilateral ethmoidectomy have been done. Irrigation by displacement method is now being carried out. Patient shows some improvement in his condition. Filling defect probably due to allergic condition.

*Case No. 9.* White male, aged 32 years.

*Complaint:* Periodic attacks of severe pain over left side of face and head accompanied by tearing of left eye, of four



No filling defect. Transillumination dark.

years duration. Advised on several occasions to have a radical operation done on left maxillary antrum. Transillumination dark. No pus on irrigation of left antrum. The left antrum was filled with iodized oil. Retained 19 cc's. Antrum appeared normal in outline, no filling defect.

This patient was referred to the internist who made a diagnosis of trigeminal neuralgia. An alcohol injection brought about relief from his symptoms for about six months. His symptoms reappeared, he was then referred to Dr. Frazier, Philadelphia, who sectioned the second division of the sensory portion of the nerve. He is now free from pain.

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#### TREATMENT OF RHEUMATIC FEVER PATIENTS WITH AND WITHOUT SALICYLATES: CLINICAL AND ELECTROCARDIOGRAPHIC STUDY

Thirty-three patients with rheumatic fever who received adequate salicylate therapy and thirty who served as controls were compared by A. M. Master and Alfred Romanoff, New York (*Journal A. M. A.*, June 4, 1932), clinically and as to detailed electrocardiographic evidence of myocardial involvement. No essential difference was discovered. In the rheumatic fever patients, whether or not salicylates were administered, a 100 per cent involvement of the myocardium was found. The duration of hospital stay in the control group was forty-six days; in the salicylate group, forty-two days. One death occurred in each group. Polycyclic course, occurrence of pericarditis with or without effusion, and involvement of the lungs and other viscera were practically the same in the two groups. The electrocardiographic changes indicative of myocardial involvement revealed a surprising coincidence of changes in the two groups, qualitatively. The authors believe that there is no evidence that salicylates prevent cardiac complications or shorten the duration of hospital stay, although they are at present the most efficient antipyretics and analgesics for the treatment of acute rheumatic fever.

#### PHRENICECTOMY AS AN AID IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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Tuberculosis has existed from the most ancient times, Hippocrates having described very accurately the clinical manifestations of pulmonary tuberculosis. Since the time of Koch's discovery of the tubercle bacillus in 1882, scientific medicine has put forth every possible effort in an attempt to find a cure for this widespread disease which takes such a heavy toll each year. While general principles must guide us in the treatment, no formula applicable to every case can be devised. The essentials of treatment today remain the same as during the time of Trudeau and other pioneers, and these essentials are rest of body and mind, good food and fresh air.

One of my professors, while lecturing to the class on tuberculosis said, "there are three essentials in the treatment of this disease—rest, rest, rest." And so today, rest continues to be the most important feature. But during the last twenty years, surgery has come to the rescue and brightened the path of the consumptive with another ray of sunlight. The ray of sunlight to which I refer, is the operation known as phrenicectomy.

Phrenicotomy was suggested by Stuertz in 1911, for the treatment of basal tuberculosis and bronchiectasis, and soon after used independently by Sauerbruch, who reported five cases in 1913. But the paralysis of the diaphragm which was the aim of this operation, was noted to fail in a percentage of the cases. This was later shown to be due to the presence of accessory phrenic nerves below the area of operation. Accessory phrenic nerves occur in twenty-five to thirty-five per cent of the cases according to Felix, who in 1922, proposed an exaeresis of the phrenic nerve. Goetze objected to the phrenic exaeresis of Felix, believing that there was danger of damaging important vascular structures or tearing into important structures in the mediastinum. Therefore, he proposed resecting a small portion of the nerve to the subclavius, as well as all accessory fibers between the phrenic and the cervical nerves.

In reviewing the literature of the operations done in this country, I find no



mention of damage to vascular structures due to an exaeresis of the nerve, although as has been pointed out by Matson,<sup>1</sup> certain anomalies of the phrenic may occur whereby an exaeresis may be fraught with danger. Some of his excellent illustrations show accessory branches to the phrenic encircling important vascular structures which could easily be damaged during an exaeresis of the nerve. This makes it very important to avulse the nerve slowly and to cautiously observe for any evidence of hemorrhage in the operative area.

Although this operation was at first recommended only for basal tuberculosis, experience has taught us that cavities in the apex can be closed and lesions in the upper part of the lung that are undergoing caseation often become quiescent following phrenicectomy.

Indications for the operation according to Alexander,<sup>2</sup> are:

1. In acute, highly febrile, progressive, predominately caseous types of tuberculosis, even when there is considerable activity in the better lung and when adhesions prevent the use of artificial pneumothorax and when extra pleural thoracoplasty is contraindicated.

2. For chronic types of disease, in which pneumothorax cannot be induced because of adhesions, and in which thoracoplasty is feared because the patient's general condition is too poor, or because the better lung is too much diseased.

3. For those moderately advanced or far advanced cases in which no definite contraindication to artificial pneumothorax or thoracoplasty exists, but in which phrenicectomy might be expected to effect good results without the prolonged treatment and complicating dangers of the one and the hazards of the other.

4. For those cases of early unilateral tuberculosis which do not show reasonable promise of becoming arrested by a continuation of sanatorium treatment.

It may often be used to advantage supplementary to artificial pneumothorax or thoracoplasty:

1. When partial or complete pneumothorax is not producing satisfactory results, phrenicotomy and pneumothorax may check the disease and make a thoracoplasty unnecessary, especially when there are basal adhesions and when adhesions of the lower lobe to the diaphragm

are causing pain, irritative cough, vomiting or indigestion.

2. When it is feared that the lung will gradually come out in the presence of a pleural effusion and become adherent. From experiments on rabbits Balderrý<sup>3</sup> found that in the presence of an artificially produced pleural effusion the diaphragm became fixed in the depressed position, but that when phrenicectomy was done before adhesions formed the diaphragm became fixed in the elevated position.

3. Another particularly valuable use for phrenicectomy is for persistent hemoptysis that pneumothorax does not succeed in checking because the part of the lung that is bleeding is held out by adhesions.

Alexander<sup>2</sup> and several others have recommended phrenicectomy supplementary to every artificial pneumothorax, claiming that the principal advantages to be gained are:

1. When the pneumothorax is discontinued the shrunken fibrotic lung will need to expand only enough to fill a thoracic cavity that has also been reduced in size and not one that is so much larger than the lung that the walled-off tubercles and closed cavities might be torn open. The lessened respiratory activity after phrenicectomy is further insurance against reactivation of the tuberculosis when the patient resumes active life.

2. Sauerbruch, Baer, Zadek and Ziegler report fewer and smaller effusions when pneumothorax and phrenicectomy are combined than when pneumothorax is used alone.

3. In case the patient prematurely abandons the pneumothorax, the high immobile diaphragm will forever serve as a partial substitute for the total compression of the abandoned pneumothorax and may be sufficient to maintain the gains already made.

Archibald<sup>4</sup> and others recommend phrenicectomy supplementary to extrapleural thoracoplasty. The special indications are:

1. To bring about sufficient improvement in a very sick patient so as to make later thoracoplasty a safe undertaking.

2. Preliminary to a thoracoplasty of only the upper ribs.

3. To increase the compression of the

lower lobe when it is markedly diseased and when there is special reason to stop diaphragmatic movements.

4. To increase the effect of the thoracoplasty in relieving the heart, trachea and other mediastinal structures that have been displaced far to the diseased side by the pull of shrinking intrapulmonary scar tissue.

Anatomy and physiology: the phrenic nerve arises chiefly from the fourth cervical nerve with a few filaments from the third and a branch from the fifth, although this branch is occasionally derived from the nerve to the subclavius. It descends to the root of the neck, running obliquely across the scalenus anticus. It then passes over the first part of the subclavian artery, between it and the subclavian vein, and, as it enters the thorax, crosses the internal mammary artery near its origin. Within the thorax it descends nearly vertically in front of the root of the lung and by the side of the pericardium, between it and the mediastinal portion of the pleura, to the diaphragm. Complete paralysis of half of a non-adherent diaphragm by interruption of both main and accessory phrenics causes that half to rise passively into the chest and to remain in the full expiratory position. The diaphragm remains practically immobile during respiration, thereby obtaining partial rest to the diseased lung.

#### THE OPERATION

The patient is given morphine gr. 1-6 and atropine gr. 1-150 by needle one-half hour before the operation. The skin and underlying tissues are infiltrated with a one-half per cent solution of novocain, 12 c.c. usually being a sufficient amount. A transverse incision about 6 centimeters in length is made about 6 centimeters above the clavicle beginning at the posterior border of the sternocleidomastoid muscle. The external jugular vein is usually encountered but it can be retracted or cut and ligated. After finding the nerve it is gently pinched with forceps and the patient practically always complains of pain in the shoulder and arm and occasionally in the region of the heart. The diaphragm can usually be felt and occasionally seen to contract. A few drops of novocain is then injected into the nerve, it is then separated from the surrounding structures, firmly grasped with an Ochsner or other suitable forcep, then cut and slowly

extracted. It is very important to use slow and gentle traction, otherwise it frequently breaks and a sufficient portion of the nerve may not be destroyed to bring about the desired result.

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#### A BIOLOGIC CONCEPT OF DISEASE

Eli Moschcowitz, New York (Journal A. M. A., Aug. 27, 1932), states that, the more one sees of chronic disease, the more keenly one appreciates that what has been observed are not sharply defined genera but transitions of morbid states from one to another. One realizes that much of the differentiation that has resulted from more refined observation and more detailed laboratory investigation has tended to confuse rather than to simplify the issue and has caused the classification of disease to be more artificial than biologic. Too often diseases are classified according to a mere grouping of signs and symptoms, rather than in relation to a precise etiology or a well observed consistent pathogenesis. Many chronic diseases, like biologic species, present an evolution from the primitive or embryonic to a full-fledged form. It would be just as consistent to classify the earliest, the intermediate and the final phases of disease as separate entities as it would be to classify the tadpole and the frog as different species. Most of the confusion in classifying disease comes from an ignorance of the causes of disease. As long as the cause of many chronic maladies is unknown, so long will one be forced to classify disease on the basis of clinical differentials. This does not mean, however, that mere modifications of disease processes require separate classification. Time and again, conditions that are regarded as separate disease entities eventually prove to be only biologic sports or mutations. The author calls attention to the value of the biologic assay in evaluating disease and to the necessity for studying its evolution over more extensive periods than have been customary. Unfortunately, the number of diseases in which there are positive criteria or tests for diagnosis, such as the finding of the tubercle bacillus, are limited. For the others, until either a definite cause or a definite pathogenesis has been discovered, the only way to reach an understanding of the disease is by studying its evolution, both clinically and anatomically. Such a study, moreover, is necessary in order to determine the etiology of certain obscure conditions of a long life cycle. What, for instance, is the earliest phase of the leukemias? of pernicious anemia? of Gaucher's disease? of primary polycythemia? The determination of such origins may furnish an important clue to their causes.



## A METHOD OF DETERMINING PERCENTAGE OF PARTIAL PERMANENT DISABILITY FOR THE OKLAHOMA STATE INDUSTRIAL COURT

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*The physician and the industrial court:* When an injured employee has sustained a disability of a permanent nature, the industrial courts expect the physician to determine the extent of disability. They depend on him to express in percentage the permanent or partial permanent loss, *i. e.*, he is to determine the functional ability less a disability.

This involves the physician in a matter that is without the usual sphere of his medical training. The average physician is not experienced in industrial court activities and the problem of interpreting loss of function in mathematical or monetary values is entirely foreign to his customary reasoning of prognostic determination. Since he probably has never done hard manual labor it is difficult for him to determine the ability of an injured laborer to perform his duties. The average physician is not accustomed to being definite. In his practice he deals constantly with uncertainties. He is well acquainted with, and often makes indefinite patronizing expressions, optimistic and sympathetic for the psychological benefit of the patient. When confronted, therefore, with a problem which has on the one side a claimant who expects monetary remuneration for damages to his body, and on the other side an employer who is forced by law to pay for such damages, the medical opinion immediately becomes valuable and all statements made must be such as to avoid prejudice and error.

It behooves the physician to be strictly impartial. However, testimony and opinions are rendered in every industrial court which show a wide variation in mathematical evaluations of percentages of partial disability. This cannot be remedied unless some definite system of reasoning can be evolved. It is the writer's contention that disability should be based on functional loss and not upon anatomical and physiological imperfections. The disability should be evaluated upon what the man cannot do because of anatomical

and physiological imperfections, not upon the extent of their existence. For instance, pain, atrophy or shortening of an extremity, measure the disability only to the extent that they interfere with such functions as quickness of action, coordination of movements, strength or security. Thus, we would have to consider two elements in reasoning a determination of evaluation. First, the contributing factors of anatomical and physiological damage. Second, the functional loss resulting from these imperfections.

*Contributing Factors:* The contributing factors of a partial disability claim, *i. e.*, the anatomical and physiological deficiencies, for which an accident of industry is responsible are revealed by physical examination. For instance, a fractured bone that has healed in angulation necessarily disturbs mechanical perfection of the part. It may or may not interfere with use of the part in labor. If in the examiner's opinion it does interfere with function, the extent of this loss may be expressed in terms of percentage representing a limitation of the normal service of the part of the individual, and therefore, a diminished earning capacity.

*Formulated Plan Necessary:* In order to develop a method of determining the evaluation of permanent disabilities that is fair, it is necessary to formulate a plan whereby all the various factors comprising the disability may be analyzed and expressed as a percentage of loss. After considering the relative values of the individual loss of each factor, a summary then can be taken and the partial permanent disability of the entire part expressed in arithmetical value.

*Functional Factors:* Functional factors pertaining to the ability of an individual to use his limbs and body in ordinary manual labor at normal wage earning capacity are as follows:

1. Quickness of action.
2. Coordination of movements.
3. Strength.
4. Security.
5. Endurance.
6. Safety.
7. Ability to secure employment.

*Quickness of Action* — Alertness and rapidity of movement are essential. As the result of an injury the part may be lacking in this capacity and the loss of function would be termed "delayed action," *i. e.*, the resulting physiological or

anatomical handicap such as a deformity or stiffness will cause him to be slower than normal.

*Coordination of Movements*—is necessary for smoothness and steadiness of action. This may be termed dexterity or synchronizing of movements resulting in proficiency, deftness, and good control. The loss of this function would be termed as "awkwardness," or "clumsiness." For instance, because of a stiffness in the elbow the individual might reach quickly for an object and miss it or drop it.

*Strength*—physical energy and force of intensity is a very vital element of function. Loss of strength in a part causes the individual to make an unusual effort or strain to keep up with his work and although other functions are closely allied to this one function, it stands out as an important factor, the loss of which is noticeable, such as in the act of lifting, pinching or carrying, walking or standing. The loss of this function would be termed "weakness." This functional factor and that of endurance are often similar, but a distinction usually can be made.

*Security*—and confidence in use of the part is another very important function. Once a part of the body has been injured, soreness results and interruption of the habits of activity is slowly overcome. An organ of the body has not regained trustworthiness and reliability until it can be used without a conscious effort. Where this factor has been affected, it may be determined, "insecurity or uncertainty of movement, grasping, holding or stepping." For instance, in walking or running, an individual with a shortening of his leg would be constantly on guard to prevent making a misstep or falling.

*Endurance*—and vigor is a factor of work power that often depends upon the willingness of effort and persistency of the individual. He may seem to be able to work but can withstand the strain of work for a short period only. He, therefore, cannot continue and maintain his work uninterruptedly and cannot be kept on the job. Affection of this factor may be termed, "diminished endurance and vigor."

*Safety*—and ability to protect oneself and others while at work, is of great importance in hazardous occupations and may be greatly jeopardized by a disabled part of the body. Ability to jump quickly, danger of letting go a heavy object that would strike others, or failure to ex-

ercise the part in a normal manner while working with others, is a factor which would cause any superintendent to dismiss the individual. "Endangering safety," then, is a factor in the loss of function. It involves other factors but should be given its share of evaluation because it is not always a factor of loss, even when awkwardness or slowness is counted a loss.

*Ability to Secure Employment*—Physical fitness as a factor to securing employment is of major importance in considering the extent of disability. A deformity or a stiffness of a part decreases the competency and ability and will be detected by a company examining physician who is passing only 100 percent physically fit men. In times of distress, he will be the first to be laid off. Of course, many jobs are open which do not require physical examination, nevertheless this factor plays a big role in the ability of the individual to obtain work. "Interfering with securing employment," is, therefore, considered a loss of function. This function involves the other functional losses but is not always a factor of loss even where other functions are disturbed.

The functional factors of loss then are:

1. Delayed action, slowed up motions.
2. Awkwardness and clumsiness in grasping, pushing and holding.
3. Weakness of lifting power and muscular action.
4. Insecurity and instability in holding or pushing or pulling power.
5. Diminished endurance, vigor and vitality.
6. Lowered safety and protective ability.
7. Interference with chances for securing employment.

*Rating of Functional Factors.* It is reasonable that if each of these functional factors enter into the disability of the individual, then each should bear its relation to the evaluated loss. No single factor alone is responsible for total disability. For instance, if the disabled member of the body is 100 per cent weak, quickness of action, coordination of movements, security and endurance are also affected, but not necessarily to the amount of 100 per cent in respect to performing ordinary manual labor. It



is necessary, therefore, that each of these factors should be given an evaluation according to its relative importance to the working capacity of the individual. The slowing up of activity and awkwardness are not important to the earning capacity as weakness in lifting power or the insecurity of holding, pulling or pushing power. The factors of diminished endurance and endangering safety are not to be rated quite as high as the damaging effect of lessening the individual's chance of securing future employment. The relative value of any of these factors will vary in many ways, in various cases. If each factor is given a percentage value and the sum of all factors is 100, then even though relative importance may vary, the percentage of loss of the part as a whole will be equitably estimated. There may be a difference of opinion on the individual functional values, but if each is a portion of 100%, the resulting permanent loss of each will total a proportional percentage.

The relative value of each of these functional factors of loss in respect to 100% incapacity may be generally rated as follows:

1. Delayed action .....	10%
2. Awkwardness .....	10%
3. Weakness .....	20%
4. Insecurity .....	20%
5. Diminished endurance .....	10%
6. Lowered safety factor .....	10%
7. Interfering with securing employment .....	20%
	100%

These functional factors may be rated differently by different individuals or they may vary with the part affected, as *e. g.*: in estimating the disability to the back, the functional factors of loss may be rated as follows:

1. Delayed action .....	10%
2. Diminished lifting power .....	20%
3. Awkwardness of incoordination .....	20%
4. Diminished endurance .....	20%
5. Interference with safety .....	10%
6. Interfering with securing employment .....	20%
	100%

*Variations of Opinion:* Some examiners might not agree on this evaluation of factors. They might feel, for instance, that the weakness should be valued at more than 20 per cent. If so, then some other function must be diminished in its relative value, because the total cannot be over 100 per cent. For instance, if weakness were considered 40 per cent in relation to the other functions, the value of each factor would be rated in their proportional value of the 100 per cent. A percentage of dis-

ability based on this form of reasoning, therefore, establishes a definite basis for its existence, so that if a physical examination reveals certain physiological and anatomical limitations, the effect on each functional factor can be estimated as the percentage of loss in respect to that particular capacity. The total percentages of loss will represent the partial loss of the part as a whole.

*Illustrative case:* Suppose it is found that an injury to the elbow has fully healed and on examination presents the following clinical picture:

The motion of flexion and extension is limited to an arc from full extension to 90 degrees flexion; other motions normal. The percentage of loss due to this physiological and anatomical limitation, as it contributes to each functional factor, would be estimated approximately as follows:

*Delayed action:* 25 per cent, because the alert and rapid movements of the arm would be cut down one-fourth that of normal, in respect to work.

*Awkwardness:* 25 per cent, because the coordination of movements and dexterity would be diminished at least this much.

*Weakness:* 15 per cent. This function would not necessarily be so great because an arm can be very strong, yet limited very greatly in motion.

*Insecurity:* 15 per cent, because there certainly would be a lack of confidence and interruption of previously formed reliability upon use of the arm.

*Diminished Endurance:* 15 per cent, because the necessity of increased effort in use of the arm would produce early tiring on the part of the individual.

*Endangering safety while at work:* 10 per cent, because in a hazardous occupation he would be more apt to let go an object or fail to grasp an object in his protection.

*Interfering with securing employment:* 15 per cent, because an employer or an examining physician for an employer would consider the handicap as a depreciation of the desirability or worth of the individual's working ability.

Evaluation of the partial loss of the part affected would be determined then by summing up these contributions to a

partial loss in respect to each functional factor.

25% of 10% (delayed action evaluation) .....	2.5
25% of 10% (awkwardness evaluation) .....	2.5
15% of 20% (weakness evaluation) .....	3.0
15% of 20% (insecurity evaluation) .....	3.0
15% of 10% (diminished endurance evaluation) .....	1.5
15% of 20% (interfering with securing employment evaluation) .....	3.0
	<hr/> 15.5

The partial loss to the entire arm, therefore, would be 15.5%.

*Additional disabilities:* If the clinical picture presented additional physiological or anatomical limitations, the effect of these would be estimated in percentage of loss to the remaining value of the part after deducting the first element of disability. For example, suppose that in addition to the partial ankylosis of the elbow, the examination reveals a fracture of the humerus which has healed in angulation of 20 degrees, with good union. The percentage of loss to the arm, as it contributes to each functional factor, would be approximately as follows:

Delayed action .....	0%
Awkwardness .....	5%
Weakness .....	10%
Insecurity .....	5%
Diminished endurance .....	5%
Lowered safety factor .....	0%
Interfering with securing employment .....	5%

With these estimates made, mathematical calculation is as follows:

0% of 10% (delayed action) .....	0
5% of 10% (awkwardness) .....	.5
10% of 20% (weakness) .....	2.0
5% of 20% (insecurity) .....	1.0
5% of 10% (diminished endurance) .....	.5
0% of 10% (lowered safety) .....	0
5% of 20% (interfering with securing employment) .....	1.0
Partial loss to the arm .....	<hr/> 5.0

*Calculation of additional disability:* Each loss factor must be deduced according to percentage rules.

The total of the partial loss to the arm, as a result of the fractured humerus, is 5%. However, since the loss to the arm from the elbow injury is 15.5% there is only a balance of an 84.5% arm on which to estimate an additional 5 per cent loss. 5 per cent of 84.5 is 4.22.

15.5% plus 4.22% gives a total of 19.72% disability to the arm as a result of the two factors of loss.

*Specific losses:* The compensation laws specify a certain number of weeks or a percentage of loss for certain individual members or portion of members of the body. A specified amount, for instance, is provided for total loss of use of the entire body, the arm, leg, hand, thumb and each finger and toe.

Where the law stipulates awards in numbers of weeks, the values may be reduced to percentage, to facilitate mathematical calculation. The value of the arm as established by the Oklahoma law is 250 weeks or 50 per cent of the entire body, which has a value of 500 weeks for total permanent disability. The value of the hand is 200 weeks or 80 per cent of the entire arm. The value of the fingers is: thumb 60 weeks; first finger 35 weeks; second finger 30 weeks; third finger 20 weeks and fourth finger 15 weeks. The combined value of the fingers and thumb is 160 weeks or 64 per cent of the whole arm and 80 per cent of the whole hand. It is sometimes necessary to know the value of the remainder of the hand and forearm, exclusive of the fingers. This is obtained by deducting the combined value of the thumb and fingers, which is 160 weeks, from the value of the whole hand, which is 200 weeks. 200 minus 160 is 40. Therefore the value of the hand and forearm in relation to the hand only would be 40 weeks or 20 per cent of the hand. The value of this part of the hand to the whole arm would be 20 per cent of the value of the whole hand to the value of the whole arm, which is 80 per cent. 20% of 80 is 16%. A disability to the hand of a permanent nature affects, from the functional standpoint, the entire arm, yet, if it is below the elbow, the legal point of view permits consideration of loss to the hand and arm, yet from the legal standpoint, only the specified value of the digit it allowed.

A disability to a finger, therefore, must be estimated as a percentage of loss to the finger only. If loss of the finger is to be expressed in per cent of the loss to the entire arm, the estimate is based on the value of the finger to the arm. (See Table No. I). For example, if there is a 20 per cent loss to the index finger, then the loss to the arm is only 2.8 per cent, because the index finger is 14 per cent of the arm.

In a similar manner, a loss of 25 per cent of the hand will be but 20 per cent loss to the arm as a whole. (See Table No. II), because the hand is but 80 per cent of 250 weeks, the value of the entire arm.

Where the forearm or palm is involved but the fingers and thumb action is in no way disabled, then the value of the forearm and hand to the whole hand must be considered with the finger and thumb value excluded. If a 25 per cent disability is limited strictly to use of the forearm, it



TABLE NO. I.

## COMPARATIVE VALUE OF PARTS OF THE ARM

Loss of a thumb	60 wks;	24%	loss of arm 250 wks;	30 %	loss of hand 200 wks.
Loss of 1st or index finger	35 wks;	14%	loss of arm 250 wks;	17.5%	loss of hand 200 wks.
Loss of 2nd finger	25 wks;	10%	loss of arm 250 wks;	12.5%	loss of hand 200 wks.
Loss of 3rd or ring finger	20 wks;	8%	loss of arm 250 wks;	10 %	loss of hand 200 wks.
Loss of 4th or little finger	15 wks;	6%	loss of arm 250 wks;	7.5%	loss of hand 200 wks.
Loss of a hand	200 wks;	80%	loss of arm 250 wks;	100 %	loss of hand 200 wks.
Loss of all fingers exclusive of forearm	160 wks;	64%	loss of arm 250 wks;	80 %	loss of hand 200 wks.
Loss of forearm exclusive of fingers	40 wks;	16%	loss of arm 250 wks;	20 %	loss of hand 200 wks.
Loss of an arm	250 wks;	100%	loss of arm 250 wks;	50 %	loss of body 500 wks.

TABLE NO. II.

## COMPARATIVE VALUE OF PARTS OF THE LEG

Loss of first toe	30 wks;	17.2%	loss of leg 175 wks;	20 %	loss of foot 150 wks.
Loss of any other toe	10 wks;	5.4%	loss of leg 175 wks;	6.6%	loss of foot 150 wks.
Loss of foot	150 wks;	80 %	loss of leg 175 wks;	100 %	loss of foot 150 wks.
Loss of toes, exclusive of foot	70 wks;	40 %	loss of leg 175 wks;	60 %	loss of foot 150 wks.
Loss of foot, exclusive of toes	80 wks;	45.7%	loss of leg 175 wks;	53.3%	loss of foot 150 wks.
Loss of leg	175 wks;	100 %	loss of leg 175 wks;	35 %	loss of body 500 wks.

would be estimated as 25 per cent of 20 (See Table No. I), or a value of only 5 per cent loss to the hand as a whole. To the entire arm it would be 25 per cent of 16 or 4 per cent loss.

#### MULTIPLE DISABILITIES RESTRICTED BY SPECIFIC LEGAL EVALUATION

Losses as usually specified by compensation laws are based on anatomical and physiological deficiencies and not on functional capacity. Where there are multiple lesions, therefore, the evaluation often will be found to be inadequate or too generous. If the functional standard is adhered to as a basis of estimate, a more just evaluation may be calculated. For instance, a lesion to the upper arm, another to the forearm and another to a finger, each separately may be evaluated to a percentage of loss, the sum of which would exceed 100 per cent of the arm.

For example, suppose it is estimated that because of a fracture of the humerus, involving the ulnar nerve, there is a loss to the entire arm of 60 per cent. A complete ankylosis of the elbow might be estimated at 50 per cent loss of the entire arm, and a partially ankylosed thumb might be evaluated as 10 per cent of the entire arm. The sum of these evaluations would be 120 per cent. However, in reality, there still may be some function left in the arm.

The total loss from multiple lesions should not be greater than the functional good of the part less the functional loss. By giving each part affected its percentage of value to the arm as a whole and estimating the percentage of each part on this basis, the relative functional loss will be in proportion as it affects the arm as a whole. For example, a series of lesions to the arm may be as follows:

1. An injury to the index finger causing a loss of 25 per cent.

2. An injury to the forearm causing a loss to the hand of 50 per cent.

3. An injury to the upper arm causing a loss to the arm of 40 per cent.

What is the loss to the entire arm? It is obvious that it cannot be estimated by adding the specific losses, as this would total 115 per cent.

Since the index finger is valued at 14 per cent of the entire arm, (See Table No. I), 25% of 14 is 3.5%. So that this lesion will contribute 3.5 per cent to the entire arm loss. This loss must be deducted from 100 per cent to obtain the amount of value of the remainder of the arm upon which to make further deductions. 100% less 3.5% leaves a balance of 96.5% good arm. Since the hand is valued at 80 per cent of the arm, then 50 per cent loss of the hand would be 40 per cent loss to the entire arm. 40 per cent loss of the affected arm then would be 40% of 96.5 or 38.6% loss. Subtracting 38.6% from 96.5% leaves a balance of 57.9% arm. An additional 40 per cent loss due to the upper arm injury would have to come from the remaining 57.9 per cent arm. 40% of 57.9 is 23.16%. 57.9% minus 23.16% leaves a balance of 34.74% arm. Subtracting 34.74% from 100% then, leaves a loss from the multiple influences the function of the entire disabilities of 65.26%. The individual losses then are as follows:

Loss of the arm due to finger injury	3.5 %
Loss of the arm due to forearm injury	38.6 %
Loss of arm due to upper arm injury	23.16 %
Total loss to the arm	65.26 %

*Illustrative case:* Mr. R. A., reopened his case before the Industrial Commission, claiming a change for the worse. Two years prior to the present claim, he had

received a settlement of 50 per cent loss of use of his foot. On examination it was found that he had developed atrophy of the thigh and stiffness of the knee for which an estimate was made of 10 per cent partial permanent loss of the leg. On cross examination the claimant's attorney insisted that this added disability should give the claimant a 60 per cent loss of the entire leg. This could not be possible from the mathematical standpoint and it was estimated as follows:

50 per cent loss of the foot is only 40 per cent loss to the leg as a whole, and he had been paid this amount, so that additional disability should not include what has already been counted as lost and paid for. He, therefore, only had a 60 per cent leg upon which to estimate further disability. 10 per cent of 60 is 6. Therefore, the additional loss is 6 per cent, instead of 10. His partial permanent disability then would be 40 per cent, his former loss, plus 6 per cent, his present loss, or a total of 46 per cent loss.

#### CONCLUSIONS

The writer has been stimulated to study out some definite ideas on this subject because it seems that dealings with industrial claims have come to be a part of the physician's duties and that the profession should take some steps to place it on just as honorable and scientific basis as any other part of medical practice.

It is hoped that the suggestions here developed will inspire others to continue the study.

#### DISCUSSION

*Question:* I should like to ask if Dr. McBride has tried this out on the Industrial Commission, and with what results.

*Dr. McBride:* I had about a three-hour session with the commission one day and the members suggested that as a profession we ought to have some common understanding of this thing and some method whereby reasoning could be used in testimony instead of arbitrary statements. They have used my method of estimating disabilities in a number of instances, to my knowledge. The compensation law is based on the old European law that has just been handed down. There is not much of a fundamental basis for their awards and they have just been copied from state to state in this country. The law is based on physical and anatomical loss, but the medical profession must determine the

percentage of loss. In testimony, some physicians have one impression relative to his experience and others have their impressions. I think it is our business to testify on the amount of function. We do not know so much about wages and employment. The layman knows nothing about function, so that if we can analyze function and reason it out on that basis we will at least remain in our professional domain.

—o—

#### INTRAVENOUS TREATMENT IN EXPERIMENTAL TRICHINIASIS

J. J. Miller, Jr., San Francisco; O. R. McCoy and W. L. Bradford, Rochester, N. Y. (Journal A. M. A., April 9, 1932), made an attempt to test the efficacy of several therapeutic agents in the parenteral treatment of trichiniasis. Experimentally infected rabbits were given intravenous injections of nearsphenamine, antimony and potassium tartrate, acriflavine base, rivanol, gentian violet, metaphen, and compound solution of iodine (Lugol's solution). Experimentally infected rats were treated with intraperitoneal injections of sodium iodide. In no instance was any demonstrable therapeutic effect obtained. On the basis of these experiments, the authors question the therapeutic rationales of the occasional injection of such drugs as the arsphenamine derivatives and antimony and potassium tartrate in the treatment of human trichiniasis.

—o—

#### SURGICAL TREATMENT OF PROGRESSIVE EXOPHTHALMOS FOLLOWING THYROIDECTOMY

According to Howard C. Naffziger and O. W. Jones, Jr., San Francisco (Journal A. M. A., Aug. 20, 1932), progressive exophthalmos following thyroidectomy is of mechanical origin and is the result of a pronounced swelling of the extraocular muscles. Grossly the muscles are from three to eight times their normal size. Microscopic study shows edema, round cell infiltration—often in a perivascular pattern—loss of muscle architecture, increase of fibrous tissue with areas of hyalinization, and fragmentation and destruction of muscle fibers. The authors outline an operative treatment that is not intended as a cosmetic operation, nor is it advised for those persons who have simply a persistent, stationary exophthalmos following thyroidectomy. The procedure is for those who have a progressive exophthalmos, usually with limitation of movements of the globe of the eye, with or without changes in the optic nerves and in vision. It is pointed out that, in certain instances, vision fails even though the cornea is clear, and the ophthalmoscopic examination reveals a normal fundus. The principle of the operation is that of decompression of the orbit and the optic foramen in order to give adequate space for the increased orbital content and the constricted optic nerve. One well may ask at this stage, "Is such a procedure sufficient to halt the pathologic process that is occurring?" The author can only answer that, up to date, it has seemed to be entirely adequate; in his patients there has been no recurrence, in all of them vision has been restored and there has been recession of the exophthalmos.



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### EDITORIAL

#### COMMITTEEMEN FOR THE ANNUAL SESSION, OKLAHOMA CITY, MAY 15, 16, 17, 1933

Dr. Henry H. Turner, General Chairman of the above meeting, has reported the following selections as committeemen to handle the various phases of the meeting:

#### Advisory Committee:

Dr. Arthur W. White, Chairman  
Dr. L. J. Moorman  
Dr. LeRoy Long  
Dr. A. L. Blesh  
Dr. J. M. Alford  
Dr. E. S. Ferguson  
Dr. A. B. Chase.

The Chairmen of the other committees are as follows:

Finance.....Dr. Bert F. Keltz  
Entertainment.....Dr. Rex Bolend  
Hotels.....Dr. R. O. Early  
Registration.....Dr. J. C. MacDonald  
Golf.....Dr. Wendell Long  
Scientific Exhibits.....Dr. Floyd Keller

#### OUR ANNUAL SESSION, SOME OF ITS OBJECTS

It is believed that attention should be called to some of the objects and practices carried out by our annual session. Among these are:

- (a) It is hoped no member will undertake to appear upon the program twice. If that does occur one of the appearances will have to be cut off. This occasionally happens and is obviously unfair to many other members who may also wish to read a paper before some of the sections.
- (b) Please remember that matters of business are considered by the Council only; the House of Delegates has its hands full considering reports and other matters. In any event physicians desiring to place matters before either of these bodies should have them well prepared in advance, with no uncertainty attached to their meaning. This saves time, which is a very valuable thing.
- (c) As before, both the Council and House of Delegates will meet on the first day of the meeting, May 15, 1933.
- (d) As we have persistently requested heretofore, it is not only a courtesy but a duty of those who wish to read papers, to send a copy of their paper, or at least a thorough abstract of the contents of the paper to the person who may open the discussion of it.
- (e) This year every feature of the meeting will be held under one roof and, so far as we know, upon two floors. The scientific and commercial exhibits and the registration and probably the Surgical Section will meet on the top floor of the Hotel Skirvin. It goes without saying that each member attending should register. Oklahoma holds, or has held, heretofore, a very high rate of attendance, considering the number of its members, but each year a certain number fail to register—that gives us somewhat of a black eye, so this year it is hoped that every attendant will register.
- (f) Do not come to the meeting without first having your membership card and knowing that you are in good standing. Only those upon the printed roster, prepared in advance, are eligible for registration. This saves embarrassment on both sides, for the physician as well as the registrars. It also saves a great deal of otherwise wasted time.

## SURGICAL CASES—MAKE YOUR ASSERTION POSITIVE

It is well known that in the minds of many people there is an unnecessary dread of surgical operations, the dread as a rule being all out of proportion to the work to be performed. Often these cases have been misadvised or poorly advised by the attending physician, and, as a rule, the attending physician, not the surgeon, first advises and treats the case for a more or less indefinite time. It should be remembered that practically all operations, if the surgeon is the master of the technic he should be, amount to little or nothing from the standpoint of pain or danger. Under no circumstances should a physician leave a case to a "surgeon" merely because they happen to be good friends—certainly the case should go to the best hands. Every general practitioner should bear in mind the possibilities of abdominal conditions. Most of these, if taken and handled early, amount to nothing, while procrastination, poultices, ice bags, and symptomatic medication often bring the case to a fatality or to the brink of fatality. Therefore, the attending physician should be able to fairly early make up his mind that "this is a surgical case," which is not a dangerous situation, but has grave possibilities, and should be referred to a competent surgeon at the earliest moment. It goes without saying that these cases belong in a hospital, and every hour of delay further endangers the patient. It is no reflection for a physician to call in a consultant. This consultant may find the case, instead of being appendicitis, gall bladder disease, duodenal, etc., to be one of an overlooked pneumonia. These are by no means uncommon.

The moral to all this is "be up on your toes."

## STOPPING THE HURRY-UP CANDI- DATE FOR MEDICAL LICENSURE

American students entering European medical colleges after the academic year 1932-1933, shall not be admitted to examination by any state licensing board, who do not, before beginning the course in such medical college, secure from a state board of medical examiners, or other competent state authority, a certificate endorsed by the Association of American American Medical Colleges or the Council on Medical Education and Hospitals of

the A. M. A., showing that he has met the premedical educational requirements prescribed by the before mentioned associations, if the Federation of State Medical Boards of the United States, has any power in the matter. This is the gist of a decision of the Federation which met in Chicago December 18th. It is based upon the information and belief of the Federation that there are now, in Europe 1,500 "low-grade" American students, soon to be graduated "without clinical advantages, internship, examination for license and other privileges given by such colleges to their native graduates—and returned to the United States for licensure and practice. It is the purpose of the Federation to stop the migration to European medical colleges of American students of sub-standard, premedical attainment, who are taking advantage of an opportunity to get the bare degree and return to this country to practice."

This is correct. It is obviously unfair, and discriminatory, to the student of American medical colleges, required to put in four long years of his time, followed by an internship of at least one year, to find himself confronted with, and in competition with, possibly a former fellow student, who simply packed up his grip, evaded certain reasonable premedical requirements of this country, and returns with a degree from some European medical school, technically covered by all the rights and privileges surrounding a student who has passed through years of the necessary and practical requirements demanded of the American student.

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### *Editorial Notes—Personal and General*

DR. J. A. JONES, Tonkawa, is reported ill.

THE HYGEIA COMMITTEE of the Oklahoma County Woman's Auxiliary gave the third of a series of "Silver Teas" on February 15th, the proceeds to go for more Hygeia subscriptions.

THE DALLAS SOUTHERN CLINICAL SOCIETY will meet in Dallas, headquarters, Baker Hotel, March 27, 31, 1933. A number of distinguished guests from generally over the United States will be present.

CLEVELAND COUNTY MEDICAL SOCIETY elected the following officers for 1933: President, Dr. Carl T. Steen, Norman; Vice President, Dr. Eleanora Schmidt, Norman; Secretary-Treasurer, Dr. D. G. Willard, Norman.

KAY COUNTY MEDICAL SOCIETY met in January and elected the following officers for



1933: President, Dr. Merle C. Clift, Blackwell; Vice President, Dr. W. S. White, Blackwell; Secretary-Treasurer, Dr. L. H. Becker, Blackwell.

THE OKLAHOMA COUNTY WOMAN'S AUXILIARY to the Oklahoma State Medical Association, held their January meeting at the Oklahoma Club. Sewing for the Crippled Children's Hospital was the main feature of the meeting.

GRADY COUNTY MEDICAL SOCIETY elected the following officers at their January meeting to serve for 1933: President, Dr. J. F. Renegar, Tuttle; First Vice President, Dr. C. P. Mitchell, Chickasha; Second Vice President, Dr. C. P. Cox, Ninnekah; Secretary-Treasurer, Dr. L. E. Woods, Chickasha; Delegate, Dr. Roy E. Emanuel, Chickasha; Censor, Dr. D. S. Downey, Chickasha.

OKMULGEE COUNTY MEDICAL SOCIETY elected the following officers for 1933: President, Dr. I. W. Bollinger, Henryetta; Vice President, Dr. G. A. Kilpatrick, Henryetta; Secretary-Treasurer, Dr. M. B. Glismann, Okmulgee; Censor, Dr. W. M. Cott, Okmulgee; Delegates, Drs. W. W. Stark, Okmulgee, and G. Y. McKinney, Henryetta; Alternates, Drs. J. J. C. Rembert, Okmulgee, and J. P. Nelson, Schulters.

The January meeting was held at Henryetta, January 23rd. Dr. J. E. Hughes, Shawnee, lectured and showed his movie film of "A Hunting Trip to Alaska."

MUSKOGEE COUNTY MEDICAL SOCIETY held its regular meeting February 13th. Twenty-five members were present. Dr. C. V. Rice, reported a case of Atypical Meningitis. The following program was rendered:

1. "Postmortem Cesarean Section,"—Dr. C. S. Neer, Vinita.
2. "Pneumothorax in Tuberculosis,"—Dr. J. T. Woodburn, Muskogee.
3. "Venous Pressure and Its Clinical Significance"—Dr. H. R. Rothman, U. S. Veterans' Hospital, Muskogee.
4. "Pertinent Points on Muskogee County Medical Society in its Relationship to Organized Medicine and Its Membership,"—Dr. F. G. Dewart, Muskogee.

#### "COUNTERFEIT" COURSES FOR GRADE 'A' SCHOOLS

The American Medical Association calls attention to the fact that there is being widely distributed an announcement of the Illinois College of Physicians and Surgeons, 20 North Ashland Boulevard, Chicago, which institution is offering courses pretending to fit one for requirements of class 'A' medical schools. The only organization, so far as physicians and surgeons are concerned, which issues these requirements is the Council on Medical Education and Hospitals of the American Medical Association. It seems the aggregation, above noted, is conducted by a group of chiropractors and does not even remotely approach the standards of a class A medical school.

This warning is published for the information of possible gullible students.

#### DOCTOR E. D. MABRY

Dr. E. D. Mabry, 58 year old, Oklahoma City physician, died January 25th, 1933, at the Polyclinic Hospital. His death followed some time after an operation which was necessitated by results of X-ray burns, first suffered when he experimented and used one of the first X-ray machines in the state of Texas, many years ago. Dr. Mabry was born in Burnett, Texas, February 27, 1874, the son of J. J. Mabry and Fannie Hoover Mabry. He graduated from Burnett, Texas, High School at the age of 16 and the next year began his studies in Washington University, School of Medicine, St. Louis, Missouri. He graduated there with honors as one of its youngest graduates in the class of 1895. After that he practiced his profession in Llano and Beaumont, Texas, and came to Oklahoma a few years ago, located in Oklahoma City, about two years ago in order to receive treatments for X-ray burns. He has taken post graduate work from time to time both in New York and in Chicago. He was associated with and active in the Medical Association of the localities in which he practiced and at the time of his death was a member of the American and the Oklahoma State and County Medical Associations.

Dr. Mabry was known as a physician of the "old school," insofar as his idealism, devotion to his patients, and loyalty to his profession were concerned. However he continued to keep abreast of the recent advances in medicine. Dr. Mabry is survived by his wife and two daughters, Mrs. O. A. Brewer, of Hugo, and Mrs. Basil Wagoner of Chandler.

Dr. Mabry was laid to rest in the Fairlawn Mausoleum, Oklahoma City, Oklahoma.

#### DOSTOR JOHN Z. MRAZ

##### "In Memorium"

Dr. John Z. Mraz, age 50, died in Oklahoma City, Oklahoma, on January 12th, 1933, of tuberculosis of lower ileum and cecum, after an illness of several months. He was born in Riverside, Iowa, but moved to the city of Chicago with his parents when he was but a few years of age. There he received his preliminary education and graduated from the Rush Medical College in class of 1903. Soon after his graduation in medicine he located at Prague, Oklahoma, where he engaged in general practice until 1914, when he moved to Oklahoma City. There he became associated with Dr. A. L. Blesh in surgery, devoting his time to the field of genito urinary surgery.

When this country entered the World war Doctor Mraz joined the Oklahoma National Guard and in June, 1917, was sent to Ft. Leavenworth for training. He served overseas in capacity of Commander of Field

Hospital, saw action in both Meuse Argonne and St. Mihiel offensives and was discharged in July, 1919. He immediately returned to his former associates in practice in Oklahoma City. Continuing his associations with the group that had been formed with Doctor Blesh as the nucleus. In the fall of 1919, this group associated themselves together in partnership as the Oklahoma City Clinic, which purchased the Wesley Hospital from Doctor Camp in September, 1919. He remained as member of the clinic and on the active staff of Wesley Hospital until the time of his death. Besides his special work in charge of genito urinary surgery, he gradually perfected himself in general surgery through his association with Doctor Blesh, so that for some years he carried on with his special work a great deal of the general surgery of the clinic. As to his ability in surgery and especially in the field of genito urinary surgery, one can only say that he had the confidence of one who knows he is master of his subject. Extremely careful and methodical in his work, with his long and fairly extensive experience, no situation arose but what he handled with the skill of an expert.

His personality stood him in good stead on many occasions. He could face any situation with an equanimity which was the envy of his associates. An extensive and profound reader, he had gradually evolved a philosophy of life that was extremely tolerant of the many short comings of human nature. In religion his views were liberal.

The demands on his time for his work in his practice and the many committees and meetings to which he gave a considerable portion of his time, kept him extremely busy all the time. His home, his wife and children were ever uppermost in his mind however, and nothing gave him greater pleasure than motoring with his family on holidays or week ends.

He is survived by his widow, Betsy—nee Besty May, formerly of Wilkes Barre, Pa., whom he married in 1918, and two children, John, age 9 and Milada age 6.

#### DOCTOR CHARLES D. FREDERICK O'HERN

Dr. C. D. F. O'Hern, 54 year old physician of Tulsa, died in December from an attack of heart disease.

He was born in Hinsdale, New York, in 1878, but moved with his family when still a boy, to DuBoise, Pennsylvania. He attended the University of Maryland at Baltimore and did postgraduate work in Vienna.

He is survived by his widow and three sons, and two brothers.

Burial was in the Catholic cemetery.

#### DOCTOR GAYFREE ELLISON

Dr. Gayfree Ellison, Norman, died December 22, 1932.

He was born at Sheridan, Kansas, October 28, 1875. His preliminary education was obtained at Lindsborg, Kansas. He graduated from Rush Medical College, Chicago, April, 1903. Prior to coming to Oklahoma City, where he practiced from 1906 to 1910, Dr. Ellison was associated with Dr. O. A. Ochsner at the Augustana Hospital, Chicago.

Dr. Ellison has been director of the health service department and professor of epidemic subjects, at Oklahoma University for the past 22 years.

He is survived by his wife and two children.

#### PHYSOSTIGMINE, A PERISTALTIC STIMULANT

According to P. F. Butler and Max Ritvo, Boston (Journal A. M. A., Oct. 15, 1932), physostigmine increases gastric tonus and peristalsis. This drug is of great benefit in the roentgen examination of the stomach in patients with absent or sluggish peristalsis, marked atonicity or spasm. Physostigmine enables the roentgenologist to complete his studies of the stomach in a much shorter time and with a greater degree of accuracy in the aforementioned types of cases. The average dosage is 1-25 grain (2.6 mg.) orally, the drug being effective when given by mouth. This obviates the need of injection methods. The administration of physostigmine does not, as a rule, interfere with the routine roentgen studies of the gastro-intestinal tract. Reactions are but rarely encountered, and since atropine is a physiologic antidote to physostigmine, toxic manifestations are controlled without difficulty.

#### OLFACTORY DISTURBANCES

Ernest M. Seydell, Wichita, Kan. (Journal A. M. A., Aug. 20, 1932), calls attention to the fact that in patients with olfactory disturbances it is advisable to make tests of the acuity of the sense of smell, nasal taste, nasal tactile sense and the gustatory sense. Careful olfactometric examinations followed, when possible, by accurate post-mortem examinations will extend the knowledge of olfaction. The cooperation of surgeons who come in contact with numerous skull fractures should be sought to assist in this problem. The intravenous injection of smell substances appears to be valuable in the differentiation between the respiratory and the essential anosmias, and in the treatment of the peripheral parosmias. Since the cocosmias and the peripheral parosmias are of a benign nature, it is essential that great care be taken in differentiating them from the central parosmias and hallucinations which point toward some serious cerebral disturbances.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**A Variety of Firm Post-Traumatic Oedema and Oedema of Therapeutic Origin** (*Une Variete d'Oedeme Dur Post-Traumatique: L'Oedeme d'Origine Therapeutique*), G. Metinet, *LaPress Medicale*, Feb. 1, 1933.

Secretan, of Lausanne, first described firm post-traumatic oedema. It is generally on the dorsum of the hand, and follows a relatively mild trauma. It is sometimes accompanied by decalcification of the subjacent skeletal structures. It is often obstinate.

Three types may be observed:

1. **Simulation.** Cases have been reported by Busacchi where the oedema was due to self inflicted repeated mild trauma of the back of the hand. Certain soldiers admitted that the oedema was produced by repeatedly striking the areas over the joints with the opposite fist.

2. **Vaso-Motor Troubles of Sympathetic Origin.** Reference is made to the work of Leriche who reported that firm oedema due to this cause rapidly disappears after periarterial sympathectomy.

3. **Attenuated Infections of the Lymphatic System.** Cases of this character have been reported by Imbert who regards them as "a sort of infectious elephantiasis" (*une sorte d'elephantiasis infectieux*).

A very interesting part of the report is the author's conclusion that there is a fourth type of firm oedema which is produced and kept up by frequent local hot baths after a trauma, especially a trauma of the extremity of a member (*et particulièrement d'un traumatisme portant sur l'extremite d'un membre*)—hand, for example. The condition is usually noticed where the hands have been frequently held for sometime and repeatedly in water as hot as could be borne by the patient. The region becomes infiltrated, oedematous, thickened, indurated, with stiffness of the points and limited play of the tendons. **And the hot water is the sole cause** (*Et la seule coupable de ce facheux état est l'eau trop chaude*). The treatment is to simply replace the hot baths by tepid baths when the oedema will disappear, and articulations and tendons will become normal.

—LeRoy Long.

**The Hazards of Intraperitoneal Injections** by Samuel F. Ravenel, M.D., *A. M. A. Journal*, February 18, 1933.

Intraperitoneal injections of normal saline have been employed extensively since 1918, in the treatment of dehydration in infants. More recently glucose, diphtheria antitoxin, neocarsphena-

mine, iron and blood have been given by this route.

This route permits more rapid introduction into the body of relatively larger quantities of fluid than is possible by hypodermoclysis. It is also easier than venipuncture. This explains its popularity.

It has been said to be difficult to perforate the intestine of living animals or of cadavers. There is a widespread conviction that intraperitoneal injection is entirely safe in the absence of marked abdominal distention or of inflammatory disease of the abdomen. It is the practice in some large clinics and on the part of many pediatricians to ignore moderate tympanites when fluids are needed.

That there is danger in this route of administration is borne out by cases reported by this author.

In one case, perforation of the intestine occurred during intraperitoneal injection of saline solution. In this case there were no adhesions between intestine and the parietal peritoneum. The usual precautions of using a dull needle and of pinching up of the tissues were observed. During the last week of life moderate abdominal distention existed. One must infer from this case that tympanites constitutes an absolute contraindication of intraperitoneal injections.

In two instances, incompatible blood administered intraperitoneally produced violent local and general reactions (some authors have considered typing or cross agglutination unnecessary preliminary to this method of blood transfusion).

In two cases, serious hemorrhage resulted from the "obliterated" hypogastric artery during the course of intraperitoneal injections in very young infants.

The author's conclusions with which I agree are as follows:

1. Abdominal distention is an absolute contraindication to intraperitoneal injection.

2. The introduction of unmatched or incompatible blood into the peritoneal cavity is dangerous and unwarranted. Cross agglutination before each such transfusion is necessary, irrespective of whether or not the same donor previously has been used with success.

3. In premature or very young infants, intraperitoneal injection in the midline below the umbilicus may produce serious hemorrhage by wounding the "obliterated" hypogastric artery.

4. Intraperitoneal injection, while affording the most satisfactory method of administering fluids parenterally to infants, is not so entirely devoid of danger as is generally believed.

—LeRoy D. Long.

**Prevention of Chills Following Transfusion of Citrated Blood.** Richard Lewisohn, M.D., and Nathan Rosenthal, M.D., New York. *A. M. A. Journal*, Volume 100, No. 7, Feb. 18, 1933.

This simple and easy procedure was suggested by Lewisohn eighteen years ago and since then blood transfusion has been put within the reach of every physician and surgeon. When this method was introduced, many objections were voiced against its clinical efficacy. It was claimed that the vitality of the red cells and white cells was impaired by the mixture of blood with sodium citrate. Furthermore, many clinicians felt that the introduction of an anti-coagulant was contraindicated in hemorrhagic diseases and other forms of blood dyscrasia. It has been fairly well proven that these objections are purely theoretical and that citrated blood has the same clinical value as unmodified blood, not only in cases of shock and hemorrhage, but in every form of blood.

Unquestionably a chill following a transfusion may be a serious complication. In many instances transfusions are given to patients who are very ill. In such a case, one should employ the method that produces the least number of chills. On this basis a careful clinician may prefer non-citrated blood.

However, these authors have compared large series of cases in which non-citrated blood was used, with a similar series of transfusions by the citrate method and have shown that there is no difference in the number of chills if equal care as to details of technique is applied.

The fact that chills do not always follow the use of citrated blood is indicative of the fact that the minute quantity of sodium citrate is not the cause of these chills. Also, it is a fact that in the earliest transfusions there were fewer chills than at present, and this is accounted for by the author who says that he personally attended to the preparation of the vessels, tubing and solution. In recent years with the enormous number of transfusions done by many different individuals in the hospitals there has not been standardization of technique in preparing the apparatus to be used. The preparation of the instruments (cannulas, glassware and the like) used for intravenous therapy was too lax and required standardization.

The solution of this important problem depends on the important fact that chills and reactions following intravenous therapy are due to the presence of foreign protein. This protein is either extraneous matter present in the distilled water or the remains of changed blood proteins from a previous intravenous injection. Unless the instruments are cleaned with the greatest care immediately after a transfusion, minute blood clots and other foreign matter remain in the apparatus that may cause a chill in the next case.

The main step, therefore, is the cleansing of instruments and the preparation of solutions so that they are rendered absolutely free of foreign protein. This can be done effectively only when the cleansing of the apparatus and the preparation of the solution used for intravenous therapy are centralized. Only apparatus and solutions properly prepared by competent technicians in the central preparation room should be used for intraveious purposes.

Since adopting this procedure at Mt. Sinai Hospital the authors report a reduction in the

number of chills following citrate blood transfusion from 12 per cent to 1 per cent.

Their conclusions are that:

1. Post-transfusion chills are avoidable.
2. Chills are not due to the mixture of the blood with sodium citrate.
3. Elimination of the foreign protein element will reduce the number of chills to a minimum.
4. The use of solutions (sodium citrate and physiologic sodium chloride) prepared with triple distilled water is indispensable.
5. If instruments and solutions are prepared properly, citrate transfusions can be used with safety in every case requiring a blood transfusion.

The authors of this article lay down the following plan for preparation of the solutions and apparatus:

1. Distilled water, sodium citrate and sodium chloride. Triple distilled water, obtained from a special Barnstead still, is used for the preparation of sodium citrate (30 per cent) and sodium chloride (0.85 per cent).

Sodium citrate (30 per cent) may also be bought on the open market in 5 cc. ampules. One should inquire from the manufacturer for sodium citrate prepared with triple distilled water. For actual use, 1 cc. of this concentrated sodium citrate solution is used for every hundred cubic centimeters of blood.

2. Special cleansing of apparatus. After each transfusion, all parts are separated and washed in cold water for the removal of blood. They are then washed in a dilute solution of green soap to which compound solution of cresol has been added to make up about a 1 per cent solution. They are then thoroughly rinsed in tap water.

All parts are then placed in a large pan containing sodium hydroxide (0.1 per cent solution) and boiled for five minutes. They are then transferred to a large pan containing distilled water, to remove the sodium hydroxide. The glassware and rubber tubing are again washed with triple distilled water and are ready to be assembled and sterilized, either in metal boxes or in special bundles, in the autoclave.

The glassware and rubber tubing are boiled separately. The needles are always sharpened before being treated but boiled for only three minutes in sodium hydroxide solution (0.1 per cent).

3. Preparation of apparatus for the autoclave. (a) for the donor: A bundle containing the apparatus for taking the blood from the donor (two pyrex cylinders 500 and 10cc., respectively, one glass rod, two tourniquets, two needles gage 13 and 15, Luer adapter and rubber tubing, one ampule of 30 per cent sodium citrate). (b) for the recipient: A metal box, as shown in the accompanying illustration, devised by Dr. Turner, director of the hospital, containing glassware, rubber tubing and cannulas for the transfusion into the recipient.

**Comment:** I agree with every statement made in this important article. For the past two years we have had exactly the same experience at St. Anthony Hospital in Oklahoma City, where we have established a central preparation room for all apparatus and solutions for intravenous pur-



poses. This room is in charge of one of the sisters who has done wonderful work. At our staff meeting tonight, (Feb. 20, 1933), she is to give a statistical report of our results. I am not familiar with her statistics, but I am certain from the experience with my own cases that there will be shown marked reduction in the number of reactions following intravenous therapy in the past two years as compared to the number of reactions previous to that time before we had a central preparation room.

—LeRoy Downing Long.

**Pulmonary Complications Following Operation on the Stomach or Duodenum.** H. K. Gray, M.D.  
Proceedings of the Staff Meetings of the Mayo Clinic, Volume 8, Number 5, Feb. 1, 1933.

During the first nine months of 1932, there were 422 operations in the Mayo Clinic on the stomach and duodenum. In 43 cases (10 per cent) postoperative pulmonary complications developed and 20 of the patients died. In all but 2 cases, in which partial atelectasis occurred, the process was infectious and inflammatory.

During the same period of time postoperative pulmonary complications following abdominal hysterectomy was 4.6 per cent, following a simple appendectomy 4 per cent and following cholecystectomy 6.9 per cent.

These figures bear out the belief that operation in the lower part of the abdomen is attended with a lower rate of pulmonary complications than with operation in the upper part of the abdomen. No single factor can be held responsible for such complications. It is difficult to accept the opinion that pulmonary complications are usually due to infected emboli from the field of operation because venous communication must be direct. If this were true the pulmonary complications following cholecystectomy, for example, would be accompanied by infectious processes in the liver. In actual experience this seldom occurs.

The hypothesis that these pulmonary complications are often caused by inspiration of infected material during the operation or immediately afterward seems plausible in the stomach cases where there is always a certain amount of manipulation which could cause a reflux of gastric content. With inhibition of the cough reflex in general anesthesia some of the gastric content may return down the trachea and lodge in the lung. However, pulmonary complications occur after spinal anesthesia and after local anesthesia almost as frequently as after general anesthesia. Moreover, spinal anesthesia is not entirely satisfactory for operations on the stomach.

The lymphatic system may be involved in the production of pulmonary complications following operations in the abdomen.

Since the studies of Higgins and Graham in 1928, this possibility has been considered more carefully. The anatomic relations of the lymphatic vessels would seem to make this a more plausible avenue than the venous system.

Operations in the upper part of the abdomen are attended almost invariably by a decrease in the activity of the diaphragm and as a result two factors are brought into play that predispose to pulmonary complications; namely, decreased vital capacity, and sluggish flow in the diaphragmatic lymphatic system.

In view of the fact that there is probably no single factor responsible for pulmonary complications following operation on the stomach and duodenum (and elsewhere in the abdomen), it is suggested that preoperative prophylaxis, operative prophylaxis and postoperative prophylaxis be carried out in the hope of thereby decreasing the incidence of this complication.

**Preoperative Prophylaxis:** Ascertain the possibility of respiratory infection, however insignificant it may be, and, if possible, postpone the operation. At least a week should intervene between the subsidence of such a condition and any contemplated operative procedure within the abdomen.

**Operative Prophylaxis:** The operating room should be kept warm, at least 78 degrees Fahrenheit. Inhalation anesthesia, preferably gas, oxygen and ether sequence, has been found to be the most satisfactory. Ether should be used only in sufficient quantities to insure the necessary relaxation. Following operation hyperventilation by means of oxygen and carbon dioxide should be carried out for several minutes before the patient is removed from the operating table. Speed and gentleness are attributes of inestimable value. An indwelling stomach tube during the operation and afterwards offers interesting possibilities in regard to the reduction of pulmonary complications. The adhesive straps on the dressing should be applied diagonally so as to not cause constriction of the costal arch, since this will hamper thoracic respiration. The Trendelenburg position decreases the possibility of aspiration of infectious material. This factor may explain part of the discrepancy in the incidence of postoperative pulmonary complications in operations on the pelvis, as compared with operations on the upper part of the abdomen.

**Postoperative Prophylaxis:** At the conclusion of the operation, avoid thoughtless exposure of the body. Rubbing the thorax with warm alcohol and immediate application of heated blankets decreases heat loss which undoubtedly contributes to this condition. The patient should be placed in bed in a partial Trendelenburg position until consciousness returns, when he may be placed in a modified Fowler's position. The carbon dioxide oxygen mixture of 10 per cent carbon dioxide and 90 per cent oxygen may be given for one or two minutes every hour for the first six or eight hours immediately following operation.

**Comment:** The report from this great clinic shows that there are still, even in the best hands, far too many pulmonary complications following upper abdominal operations. The details mentioned are all helpful in preventing pulmonary complications.

—LeRoy Downing Long.

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## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**The Experimental Production of Urinary Calculi.**  
Charles C. Higgins, Cleveland, Ohio, *Journal of Urology* for February, 1933, page 157.

The author ran a series of two hundred albino rats on a vitamin A deficiency diet, with 25 controls. Sand was found in the bladder of one con-

trol, no other calculi found in the controls. The first thirty days urinary calculi were infrequent in the rats on vitamin deficiency diet. At the end of two hundred days 88% of these rats showed urinary calculi. Alkaluria was a constant finding in the rats on this diet. Keratinization of the epithelium of the urologic tract was usually present after ten weeks. Urinary infection developed in a very large per cent of these rats. These factors may be contributing etiologic factors in producing urinary calculi.

The author noted that in one of four rats who had bladder calculi demonstrated by X-ray disappeared after the institution of vitamin A to the diet, for five weeks, another disappeared after seven weeks, and in the third necropsy failed to demonstrate calculi four and one-half weeks after taking vitamin A. The fourth case is at present receiving this diet, sufficient time having not elapsed. The calculi produced in this series of rats varied in size, 0.5 to 6.0 in diameter, usually spherical in shape, light brown color. They contained chiefly calcium phosphate. No oxalates or uric acid was present. Many calculi found at necropsy could not be demonstrated by X-ray.

#### Upper Urinary Tract and Adjacent Organs—The Differential Diagnosis of Pathological Lesions. William E. Stevens, California and Western Medicine, September, 1932, page 160.

The author states that a complete urological study is indicated in all obscure abdominal conditions. The urologist should have some knowledge of all of the pathologic conditions of the abdomen and pelvis, as an examination of all abdominal and pelvic organs is necessary when the diagnosis of reno-ureteral lesion is uncertain. The diagnosis of chronic appendicitis should be looked upon with suspicion, and operation is not to be considered until a thorough investigation of the right kidney and ureter has been made. Pain in the lower right abdominal quadrant is seldom due to appendicitis in the absence of other symptoms of this condition. The urologist should be proficient in the interpretation of pyelo-ureterograms, as pyeloureterography is of more importance than any other single procedure in the differential diagnosis of lesions of the upper urinary tract. Complete history, careful physical examination and laboratory study should always accompany this procedure. Cooperation of the general surgeon, internist, gynecologist and urologist is very often indicated in symptoms suggestive of abdominal pathology.

#### Constitutional Treatment of Ocular Lues. M. L. Greene, Journal Missouri Medical Association, February, 1933, page 64.

The author states that arsenicals in the treatment of optic atrophy and neuritis must be used with great caution. Many cases of latent lues would do better if arsenicals were not used. In acute luetic ocular conditions palliative treatment with mercury by mouth is inadequate, Antiluetic therapy is often of benefit in treating apparently non-luetic conditions.

#### Transurethral Prostatic Resection. Clinton N. Peters, Maine Medical Journal, February, 1933, page 4.

In conclusion the author states that this procedure is feasible and practical in many types of

bladder neck obstruction. In malignancies it offers the best way of dealing with the obstruction to the urinary flow with the least possible hardship to the patient. It is too recent a procedure to draw conclusions as to end results or its value in replacing prostatectomy in all cases. It is a major surgical operation for the use of trained instrumenters accustomed to dealing with bladder neck pathology.

#### cedure is feasible and practical in many types of The Inheritance of Syphilis. R. Matzenauer, Wein. klin Wchnschr. Vienna, 1932, XLV. 1337.

From his own experience and a discussion of the literature the author concludes that congenital syphilis is transmitted only thru the placenta, and that no proof has been given of inheritance from the father. The author believes that there is no congenital syphilis unless the mother is syphilitic.

#### Diseases of Common Interest to The Dentist and Oto-Laryngologist. R. T. Atkins, New York State Journal of Medicine, 1932. Vol. 32,

The most common lesions of syphilis that occur in the mouth are the mucous patches of the secondary stage which are often found on the hard palate, lips, gums, and sides of the tongue. The primary lesion may be located on the lips, tongue, palate or tonsil. Tertiary lesions involving the jaws may cause changes in the structure of the mouth.

#### The Scrotum. C. B. Taylor, Southern Medical Journal, February, 1933, page 187.

The author presents a series of 428 cases of pathology in the scrotum, epididymitis 227, hydrocele, 108, varicocele 38, orchitis 26. Others including eight conditions embraced the remainder. Gumma of the testicle at times offers difficulty in diagnosis, its slow growth, absence of pain, uniformity of outline, and firm consistency make the differential diagnosis from malignancy difficult. A positive serological test is suggestive but not conclusive. Quite often a therapeutic test is necessary. If no response is received in ten to fifteen days on antiluetic treatment surgery should be resorted to. Tumors of the testicle are almost invariably malignant. They are fairly rapid in growth, rarely present a nodular appearance, the mass being smooth, firm and heavy. There is no translucency. The epididymis is not involved and can be outlined. One of the commonest complications of gonorrhea is epididymitis, which presents no difficulty in diagnosis, the history of infection, suddenness of onset, rise in temperature, extensive pain, hardening and tumefaction of epididymis, redness and heat present a picture that is easily read. This author states that acute epididymitis should be operated upon immediately for relief of pain and to facilitate return to industry.

### BOOK REVIEWS

Office Surgery, (from Everyday Practice Series, edited by Harlow Brooks, M.D.). By Fenwick Beekman, M.D., Visiting Surgeon, Bellevue Hospital; Visiting Surgeon, Hospital for the Ruptured and Crippled; Consulting Surgeon, Lin-



coln Hospital; Clinical Professor of Surgery, N. Y. University and Bellevue Medical College. Cloth, 94 illustrations. 402 pages. Price \$5.00. J. B. Lippincott Company, Philadelphia and London.

In looking through this book, which is a small, practical and very useful edition, we can do no better than to quote from Dr. Brooks' introduction as follows: "A very considerable percentage of the work of the general practitioner is, necessarily, composed of surgery. Only in exceptional instances is the man in general practice, however, called upon to undertake the graver and more complicated surgical operations, though he must meet emergencies on many occasions which demand on his part a very high degree of diagnostic skill, surgical judgment and ability. Unless he is also schooled in what not to do; unless he is fully competent to improve the prospects of his patient, no matter how grave the condition, he will not succeed in general practice.

Unnecessary infection, additional traumatism inflicted in the course of unskilled examinations on the part of an indiscreet practitioner may be the cause of the gravest sort of complications, beyond the skill perhaps, of even the most thoroughly equipped surgeon. Hence every general practitioner must prepare himself at least in the elemental principles of surgery, even though he does not choose to operate himself, except, perhaps, in the most insistent of emergencies."

We have rather continuously heretofore called attention to the role of general practitioners who in most instances see this type of case first and that it is essential that he should early appreciate the dangerous potentialities of even the smallest surgical case. The writer recalls two deaths brought on by merely pulling a hair from the inside of the nose. We would also call attention to this, under fractures "immediate reduction, anaesthesia during reduction and X-ray examination following reduction" If this rule were followed we would greatly reduce the number of bad results and save a great deal of permanent cripplement. With reference to anaesthesia, we too, will remind the reader of the great value of the use of local anaesthesia, directly injected at the site of the fracture. This is a method made popular by Boehler, however, those undertaking this treatment should thoroughly perfect their technic.

**The History of Dermatology.** By Wm. Allen Pusey, A.M., M.D., LL.D. Professor of Dermatology Emeritus, University of Illinois; Sometime President of the American Dermatological Association and of the American Medical Association. Cloth. Illustrated, 224 pages. 1933. Publisher, Charles C. Thomas, Baltimore, Md., and Springfield, Ill.

Perhaps there is no man in America better informed on all phases of dermatology than Dr. William Allen Pusey. This history of dermatology will naturally appeal to the dermatologists and their allied workers especially. However, it should appeal to all men who are interested in the evolution of medicine. It is worthy of repetition to note that Dr. Pusey says "There is no history of dermatology in English and I have undertaken in this work to supply that lack. It has been necessary, of course, to summarize the subject, but I have recited the story in sufficient fullness to include most of the significant details."

This volume contains chapters on:

Early Ancient Dermatology, Egypt to Greece, 3000 B. C. to 300 B. C.

Graeco-Roman, Arabian and Medieval Dermatology, Rome to the Renaissance, 300 B. C. to 1500 A. D.

Dermatology in Early Modern Europe, 1500 to 1750.

Dermatology Finding Itself, 1750 to 1825.

Threshold of Modern Dermatology, Clinical Dermatology 1800 to 1850.

Threshold of Modern Dermatology, Laboratory Dermatology, 1800 to 1850.

Modern Dermatology, First Phase, Continental Europe, 1850 to 1900.

Modern Dermatology, First Phase, Great Britain and the United States, 1850 to 1900.

Modern Dermatology, Present Phase, Since 1890.

Historical Index of Dermatology.

#### INTRAVENOUS STREPTOCOCCIC VACCINE THERAPY IN CHRONIC ARTHRITIS

Macnider Wetherby and B. J. Clawson, Minneapolis (Journal A. M. A., June 4, 1932), report that 80 per cent of 365 chronic arthritic patients treated intravenously with a streptococcic vaccine were clinically improved. The degree of improvement bore no relation to the degree of reaction following the injection. Improvement was manifested in most cases after five weekly injections. The agglutinating titer of the patients' blood rose during the course of treatment. Improvement as a rule did not take place until the titer had risen to 1:6,400 or more. Treated patients' serums which agglutinated streptococci in dilutions of 1:6,400 or more had a much higher bactericidal power for streptococci than the serums of untreated chronic arthritic patients. The height of the agglutinating titer in most cases seems to be a reliable indicator of the degree of protective immunity to streptococci possessed by the treated patient.

#### STREPTOCOCCIC MENINGITIS: RECOVERY IN THREE CASES

Although instances of recovery from streptococcic meningitis are exceedingly few, Emanuel Appelbaum, New York (Journal A. M. A., April 9, 1932), reports three cases in which all the patients were treated conservatively and all recovered. On the basis of his observations in these cases and a review of the literature, he concludes that no specific procedure can be formulated for the treatment of streptococcic meningitis. Early spinal drainage, even though moderate, may be regarded as an important factor in the management of these cases. When streptococcus hemolyticus is the causative organism, it seems quite logical to employ antiscarlatinal serum intraspinally. Surgical intervention should, of course, be resorted to for the removal of definite suppurative foci. Other therapeutic measures must, in the light of the present limited knowledge, be regarded as experimental. Finally, one must always bear in mind the possibility of spontaneous recovery from this disease.

### END-RESULTS OF SURGERY IN EXOPHTHALMIC GOITER

Howard M. Clute and J. Ross Veal, Boston (Journal A. M. A., Aug. 20, 1932), point out that the immediate advantages of surgical measures in the treatment of exophthalmic goiter have been convincingly demonstrated and that the operation of subtotal thyroidectomy has been made a safe procedure. They summarize the results of surgical treatment in ninety-seven patients whom they have followed consistently for over five years since operation and have checked by personal examination and basal metabolic estimations. In eighty-two patients complete and satisfactory cure was obtained. In seven other patients slight toxicity is still present, entirely controlled by either secondary operation or compound solution of iodine. In three patients of the group myxedema developed; this was entirely controlled by desiccated thyroid. Four of the patients in the group are still toxic. None of the four are in any way incapacitated, and all are working. One of the patients in the group died following a recent secondary operation for recurrent hyperthyroidism and congestive heart failure. It is therefore, the authors' belief that ninety-two, or 94.8 per cent, of these ninety-seven patients are cured of their disease by subtotal thyroidectomy, and that this figure may be assumed to be a fair estimate of the probability of cure of exophthalmic goiter by adequate surgical measures.

### WHEN, AS AND IF

The bottle-fed baby exhibits symptoms indicating partial vitamin B deficiency—described by Hoobler as (1) Anorexia (2) loss of weight (3) spasticity of arms and legs (4) restlessness, fretfulness (5) pallor, low hemoglobin, etc.

Dextri-Maltose with Vitamin B may be used in adequate amounts (up to 71 Chick-Roscoe units) without causing digestive disturbance. This ethically advertised product derives its vitamin B complex from an extract of wheat germ rich in B and brewers yeast rich in G. Physicians who have attempted to make vitamin B additions to the infant's formula but who have been obliged to abandon this due to diarrheas or other unfortunate nutritional upsets, will welcome Mead's Dextri-Maltose with Vitamin B. This is a tested product with rich laboratory and clinical background and is made by Mead Johnson & Company, a house specializing in infant diet materials.

Not all infants require vitamin B supplements, but when the infant needs additional vitamin B, this product supplies it together with carbohydrate. In other cases, the carbohydrate of choice is Dextri-Maltose No. 1, 2 or 3.

### LOWER FAT DIET IN DIABETES

A group of 150 diabetic patients treated by Joseph H. Barach, Pittsburgh (Journal A. M. A., April 9, 1932), with lower fat and higher carbohydrate diet required no more insulin in most cases and less insulin in many. The author emphasizes the fact that the low fat diet is more satisfactory to the patient and complications of the disease are reduced.

### PROLAPSE, CYSTOCELE, RECTOCELE AND TRUE VAGINAL HERNIA

James C. Masson, Rochester, Minn. (Journal A. M. A., Oct. 1, 1932), draws attention to the difference between true vaginal hernia with a sac of peritoneum, which is quite rare except as a postoperative condition, and the condition known as gynecologic hernia. As the latter has no peritoneal sac, he speaks of it as a false hernia. The difference in the pathologic picture of a true vaginal hernia and any of the false type is striking. True hernias are spoken of as anterior and posterior, depending on whether the peritoneal sac which is present beneath the vaginal mucous membrane dissects along the anterior or posterior vaginal wall. Under this classification should also be added a much larger group of postoperative hernias, developing after hysterectomy. False hernias of the gynecologic type have no peritoneal sac. When the protrusion is in the anterior wall of the vagina it is called cystocele. When the rectum bulges into the vagina it is a rectocele, and when the uterus itself sinks to a lower level than normal, in the vagina, it is uterine prolapse. A fairly accurate idea of the condition is obtained by grading the hernias 1, 2, 3 or 4 according to their size. The author does not consider the types separately as it is seldom that one type exists without some tendency toward the others. If the type is pronounced (graded 3 or 4), it is easily recognized. In the presence of a large cystocele or rectocele the patient will often have to make pressure on the walls of the vagina in order to empty the bladder or rectum, and in the presence of complete prolapse, or procidentia as it is often called, the uterus will lie outside the vulva, and because of the venous stasis, exposure to air and friction as the result of rubbing on the thighs and clothing, will become edematous and ulcerated. However, carcinoma of the cervix seldom develops in such cases. Early in the development of these hernias, however (size graded 1 or 2), they are often overlooked as the cause of abnormal menstruation, bearing down, uncomfortable feeling in the pelvis and lumbosacral backache. As a rule they develop as the direct result of trauma at childbirth, but occasionally one or the other of the conditions, especially a cystocele, will be found without any tendency toward uterine prolapse, usually in nulliparous women. In such cases increased intra abdominal pressure and poor development in the anterior muscular part of the pelvic diaphragm probably are the predisposing causes. Urethroceles and diverticula of the urethra are frequently mistaken for cystoceles. The treatment of true anterior and posterior vaginal hernia is surgical. Untreated, the hernia tends to enlarge and the use of palliative measures, such as supports of various types, has proved unsatisfactory. No uniform procedure has been adopted in treatment because true vaginal hernia occurs so seldom, and because coexisting malpositions of the pelvic organs vary so greatly in different cases. However, certain well recognized principles governing the treatment of hernia in general must be adhered to in dealing with this type of hernia. Three measures, which the author discusses in detail, must be accomplished; isolation of the sac, disposal of the sac and repair of the defect at the point of egress of the hernia from the abdomen. The means by which these ends can best be accomplished depend somewhat on the condition and position of the pelvic organs.



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## TETANY\*

H. T. BALLANTINE, M.D.  
MUSKOGEE

We are so accustomed to think of tetany as being a condition associated with infancy, or superinduced by excessive alkalosis, brought on in our efforts to combat acidosis that we are likely to overlook those very mild cases, in older children, or, in those border-line cases to consider a case of tetany as being an idiopathic example of true tetanus, and treat it as such. For these reasons your attention will be largely directed to tetany in older children and young adults.

Tetany, also known as intermittent tetanus, little tetanus or tetanilla is a motor neurosis involving the spinal and bulbar gray matter and the peripheral nerves; somewhat generally distributed and of metabolic origin. The convulsions are sudden in onset, occasioned often by trivial nervous shocks and may or may not be accompanied by sensory or constitutional disturbance. The spasm may have a duration of a few minutes or may last for days, or as in one of my own cases, was continuous in certain groups of muscles for months. Consciousness may be lost at the height of this convulsion, though this is not usually true. In young adult life this disease is relatively rare, though still common enough to be remembered and recognized, when seen.

### SYMPTOMS

These are divided into those of the spasm and the interval between the spasms.

The onset is usually sudden, but may be preceded by sensory phenomena, such as nausea, vertigo, headaches, and occasionally vomiting. There may be marked depression and nervous irritability. The first symptoms noticed are a vague tingling in the extremities followed by

a tonic convulsion. The spasm is most marked in the upper extremities and the rigidity may be so severe as to make it impossible to overcome the stiffness. The muscles of the face may be so involved as to produce a grimacing look. Occasionally the adductor muscles of the arms and legs are involved so that they are drawn together. Taylor says the true pathognomonic symptoms of tetany are spontaneous intermittent paroxysmal muscular contractions. The most common seat of these contractions is in the muscles of the forearm. The fingers being flexed at the metacarpophalangeal articulation. While the phalanges are extended, the thumb being strongly adducted. The wrist being flexed and the hand turned toward the ulnar side, producing the so-called writer's hand.

If the lower extremities are involved the thighs may be adducted, the legs either flexed or extended. The toes are likely to assume the position of talipes equinus.

The spasm may affect the muscles of the back, abdomen, or diaphragm, and inspiration be impeded so that cyanosis develops. Any group of muscles may be affected, and the symptoms present will be reflected by the group involved. From the marked over-tonicity muscular pain will be present in direct ratio to the degree of the tonicity. The spasm is symmetrical, though cases have been reported which were unilateral in the beginning. If there is a tendency to a unilateral involvement this rapidly becomes bilateral.

Clonic spasms almost never occur. And the spasm begins in the periphery and becomes generalized, rather than from within as occurs in tetanus. The masseter muscles are not early affected, and may not become involved at all. Nor is the reflex excitability high. Fever may be present, arising from some associated condition. During the interval, the patient is usually quite comfortable and the only remaining evidence of the spasm is soreness and tenderness in the muscles, associated with a marked weakness. There may be

\*Read before Muskogee County Medical Society, April 25, 1932.

oedema, gradual in onset, affecting mainly the dorsum of the hands and feet.

Trousseau's symptom when present is pathognomonic, though in my own cases has been hard to demonstrate. This symptom is the fact that during the quiescent period if the limb affected be grasped so that the large nerves and arteries, which lie along the under surface of the limbs be pressed upon, the characteristic cramp can be made to return. It may require considerable pressure over a period of time to elicit the sign, but it is considered quite valuable when it occurs.

Chvostek's sign is comparatively rare in children. It consists of an extraordinary susceptibility of the nerves in tetany to mechanical impression. For example, a blow with a percussion hammer over the facial nerve will produce a twitching of the angle of the mouth, or of all the muscles of the facial distribution. The third important sign of tetany is known as Erb's sign. This is a greatly exaggerated electrical excitability of the nerves. Weak faradic or galvanic currents produce muscular contractions in excess of the normal response.

Sensory phenomena are few. There are no disturbances of cutaneous sensibility. Respiration is rarely affected unless due to a fixation of the respiratory muscles. The pulse is usually rapid and bounding in character during a paroxysm, but is little changed during the interval. The duration of an attack of tetany is quite variable, as well as is the interval between the attacks. In one of my cases a tonic contraction of the muscles of the foot lasted about five weeks.

#### DIAGNOSIS

This is said to always be quite easy, due to the characteristic phenomena exhibited by the typical case of tetany. I have not always found this to be true in my own cases, which, perhaps, have not been typical ones. During an attack, the position of the arms and legs, particularly the position of the hands, the ease with which an attack may be provoked during an interval, and the ability to demonstrate Trousseau's, Chvostek's and Erb's signs, even in the latent stage should make the diagnosis complete. The diseases to be excluded are meningitis, polio-encephalitis, and tetanus.

#### ETIOLOGY

Tetany may be sporadic or it may become epidemic, it may be fairly prevalent

for a while and then apparently dies away and not be seen in that locality for a long time. It occurs in both children and adults though it is most frequently in the very young. There is apparently no difference in its frequency, so far as sex is concerned, though it is much commoner among the poorly nourished, and those with unstable nervous systems. It almost always follows upon depressing conditions, hence is a frequent sequela of the transmissible diseases where marked depletion of the nervous system has occurred. Disturbances of the parathyroid glands seem to play an active part in the production of many of these cases. A deranged calcium metabolism, associated with hypoparathyroidism will be found present in the great majority of these cases. Just what this deranged calcium metabolism is has not been clearly worked out, though it is thought to be a definite deficiency in the circulatory blood. This however is not always true, for in one of my own cases there was a slight definite increase in the blood calcium, yet the administration of calcium chloride intravenously was followed by a marked systemic reaction and a prompt recovery.

Alkalosis is also a very potent factor in the production of tetany. This may occur as previously mentioned, while endeavoring to overcome a pre-existing acidosis or it may follow a prolonged attack of forced expiratory respiration, or prolonged vomiting. Experiments have shown that excessive administrations of alkalies will produce tetany, and that these attacks may be promptly relieved by administering acids to counteract the existing alkalosis.

#### PATHOLOGY

No constant, nor characteristic lesion has been found constant in any autopsies made in tetany. Dercum reports the finding of serous exudate into the cervical spinal cord and into the ventricles of the brain, sclerotic changes, spinal intradural hemorrhages, with atrophy in the ganglion-cells and nerve fibers.

#### PROGNOSIS

The prognosis as a whole is favorable. Most cases recover, though the duration cannot be predicted in advance.

#### TREATMENT

This of a necessity is divided into the treatment of the attack and the treatment during the quiescent period. All associated factors should be overcome, such as



rickets, anemia, nervous and physical debility must be corrected, and any calcium deficiency overcome.

During an acute onset the administration of opiates or other nerve sedatives in fairly large doses may be necessary to control the spasms. The administration of calcium both by mouth and intravenously should be begun at once, and continued well past the stage of convulsion. Parathyroid, either by mouth, in tablet form, or better still, by intra-muscular injection, should be given throughout the attack, and in many cases continued for a prolonged period afterward. Owing to the type of spasm, attention must be given to the affected parts, to the end that pressure sores are avoided. These patients are best treated during the attacks in quiet, semi-darkened rooms, with as little disturbance in their care as possible, since any nervous excitement may bring a return of the convulsion.

#### HYPERINSULINISM

Louis G. Heyn, Cincinnati (Journal A. M. A., April 23, 1932), reports a case of spontaneous hypoglycemia or hyperinsulinism. The symptoms of this condition include the following: a nervous irritability and anxiety, weakness and fatigability, hunger, tremor, muscular twitching, lack of clearness of vision, diplopia, unsteadiness of gait, syncope, excessive perspiration, loss of emotional control, convulsions and even coma. These symptoms are all comparable to those which follow excessive doses of insulin at different levels of the hypoglycemic reaction. Normal blood sugar readings are variously estimated as between 80 and 120 mg. per hundred cubic centimeters of blood. Mild symptoms are most apt to occur when the blood sugar reaches 40 to 50 mg. The author considers that it will be interesting to note in the future whether any of these cases of hyperinsulinism may not burn out and later become diabetic. In the meantime, it is difficult to decide what therapeutic measures should be used. When one recalls the many dark years, when various methods of carbohydrate and later also of protein restriction in diabetes mellitus were the only recourse, one wonders whether carbohydrate administration may likewise be the only aid in hyperinsulinism when no neoplasm is present. When one sees the remarkable results of carbohydrate feeding in the relief of hypoglycemic symptoms, one is inclined to be satisfied with results. But, no doubt, in spite of subjective relief, increasing amounts of carbohydrates may become necessary; then surgery, even if unsuccessful, must be tried. Roentgen diagnosis of pancreatic neoplasm is not promising except when the neoplasm is fairly extensive. Roentgen therapy might be tried but would probably be fraught with many dangerous possibilities. And so, also therapeutically, for the present, surgery appears to be not good enough.

#### ENDOCRINE THERAPY IN GYNECOLOGICAL PRACTICE

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Endocrine therapy properly applied offers at the present time a rational basis upon which to bring about a readjustment of some of the conditions which have in the past caused the gynecologist no small amount of dissatisfaction with his efforts. The failure to provide adequate aid in this large class of patients has resulted in the enrichment of the charlatan and the patent medicine vendor.

Growing out of the investigations of Allen, Doisy, Zondek, Ascheim and others, there has been developed a pro-hormone that when introduced properly into the human body stimulates the anterior pituitary body to produce an added amount of its sex hormone and will stimulate the development of the Graafian follicle, also luteinization which in turn may aid in controlling functional uterine bleeding. This substance is recovered from the urine of the pregnant female. There has also been developed an estrus-inducing ovarian follicular hormone which is prepared from the fetal fluid of cattle and urine of pregnant women—which when properly introduced into the female body will aid in inducing estrus.

The above products have been so carefully developed and dosage so proven that it is now possible to proceed intelligently to correct many menstrual disorders, together with vasomotor and emotional symptoms which so often accompany these disorders. There being a fairly broad field in which one or both of these products may be successfully exhibited and there being a rather large proportion of gynecological patients who have an imbalance somewhere in the menstrual mechanism. It is of utmost importance that the physician who would do that for his patient which will give the best results to investigate carefully these products and apply them with the same intelligent care that he would do a delicate operation.

In the normal cycle the Graafian follicle develops and matures during the first half of the inter-menstrual period. During its development it elaborates the follicular or estrus inducing hormone which induces growth of the uterine endometrium and characteristic changes in the mammary glands and vagina. In addition to these

growth functions in the genital tract, the estrus inducing hormone regulates secondary sex characteristics.

The concentration of the estrus inducing hormone in the blood increases during the first half of the intermenstrual period and attains a maximum peak value about two weeks prior to the onset of the next menstruation. This rise in the concentration of the blood is paralleled by a rise in the excretion of the hormone in the urine. After the rupture of the follicle on approximately the fifteenth day, the concentration of this hormone drops rapidly to a low value to be followed about nine days later by a short rise just before menstruation.

Accompanying this appearance of follicular hormone in the early part of the intermenstrual period, there is growth and development of the endometrium characterized by an increase in the blood vessels and blood spaces and by an increase in the stroma. This is sometimes referred to as the interval type of endometrium. If the growth and rupture of the follicles are followed by normal development of corpora lutea, the uterine endometrium shows a somewhat further increase of its blood spaces and extensive development of its glandular structure, preparing it for the reception of fertilized ovum. These further changes under the influence of the hormone of the corpus luteum are often designated as the pseudopregnant or true pre-menstrual changes and comprise the corpus luteum phase of the cycle.

If pregnancy takes place the corpus luteum phase continues and facilitates and perpetuates the retention of the fertilized ovum and protects the developing embryo.

When the corpus luteum does not develop properly, due to failure of the follicles to rupture, the final changes described above do not occur in the endometrium, but, if in spite of this lack of development of the corpus luteum phase, there has been follicle growth and elaboration of adequate amounts of estrus-inducing hormone, there develops the so-called interval type of endometrium and bleeding occurs which simulates menstruation. The maintenance of a normal menstrual cycle depends upon adequate development of follicles, ovulation and subsequent development of corpora lutea, in absence of ovulation there is no luteinization unless artificial stimulation is resorted to.

The anterior pituitary sex hormone should play a determining role in initiating this cycle of changes in the ovary and through it, the uterus, and will do so except when there is local or ovarian pathology.

At menopause changes occur in the ovary which apparently render it incapable of responding to the sex hormone of the anterior pituitary. At the same time there is a cessation of the inhibitory action of the ovary upon the anterior pituitary function and consequently the anterior pituitary hormone is excreted in the urine in increased quantities. The failure of normal follicular development is followed by diminished or entirely suspended production of estrus. As a result, there is amenorrhea and there may also be accompanying subjective symptoms, vasomotor and emotional instability, flashes, headaches, weakness and mental depression. Eventually changes take place in the cell structure of the anterior pituitary body, cer-

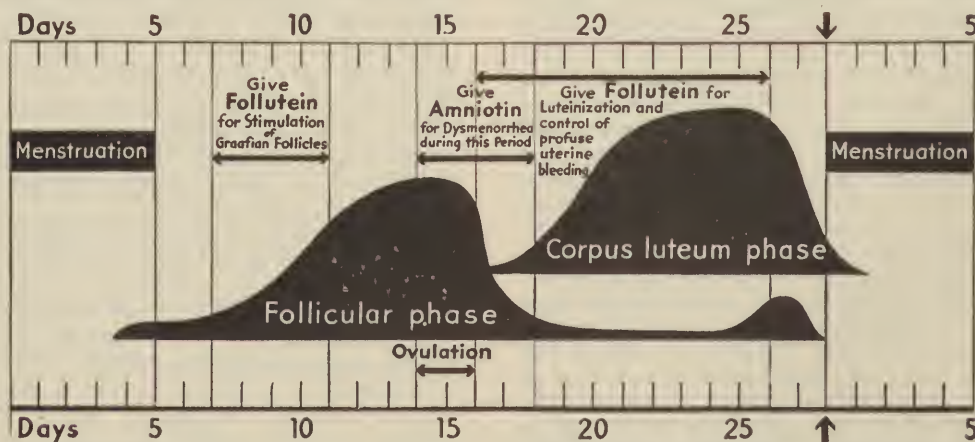


Diagram of the menstrual cycle showing the time during the cycle when Follutein and Amniotin should be administered to obtain certain therapeutic effects. The Follicular and corpus luteum graphs represent blood concentrations of the respective hormones.



tain cells known as castration cells making their appearance, and the production of anterior pituitary sex hormone stops as a result of these changes. During the menopause the changes occurring in ovarian function frequently result in hormone unbalance which produces menorrhagia. Certain classes of patients with symptoms attributable to hypo or hyper activity of the anterior pituitary and ovaries may now be treated in a more scientific manner and with much better results than in the past.

From this diagram it would appear that delayed puberty, infantilism and eunuchoidism should be treated by giving the anterior pituitary hormone about four days beginning immediately after the assumed menstrual period if known. That it should be again given for a period of about ten days beginning at first portion of the third quarter of menstrual cycle. Estrus inducing hormone may be needed for about four days beginning at last portion of second cycle and overlapping administration of anterior pituitary hormone. This should

be given provided, examination of patient's urine yields no evidence of satisfactory amount of estrus inducing hormone.

The administration and dosage of these products is comparatively simple but like all other treatment is in no manner a cure all, nor will results be obtained unless certain cardinal factors are carefully considered.

It can readily be understood that there would be no indication for the administration of the sex hormone in the true menopause except in cases of functional uterine bleeding, because of the atrophy or removal of the ovaries which are stimulated by the sex hormone, there being no ovary there can be no stimulation.

Below is a tabulation of forty-nine patients treated along the lines mentioned. Although this small series of patients can mean nothing, conclusively, still it is an indication as to what results may be obtained.

#### TREATMENT

No. Patients	Age	Menstrual Symptoms	Estrus Inducing Hormone	Prohormone Anterior Pituitary	Both	Results
9	14 to 20	4 delayed puberty 3 scanty Men. 2 Cessation		3	4 2	Menstruation established M. increased. M reestablished
8	24 to 35	Surgical Menopause	8			All were materially benefitted
9	30 to 54	Menorrhagia		9		5 corrected 1 benefitted 2 no benefit
6	25 to 44	Dysmenorrhea	4		2	4 benefitted 2 no results.
4	48 to 55	Vasomotor and Emotional Instability	4			Greatly benefitted
10	43 to 55	Neuroses of the Menopause	10			8 were materially benefitted. 2 were moderately benefitted.

The products used in the above cases were:

Ovarian Follicular  
Sex Hormone  
Anterior Pituitary  
Estrus inducing  
Hormone  
Follutein (Squibb).  
Amniotin (Squibb).  
Progynon (Shering).

All were administered by hypodermic injection except progynon which was administered internally. Dosage anterior pituitary hormone five hundred to twelve hundred fifty rat units divided in doses of one hundred to two hundred fifty rat units. Estrus inducing hormone one hundred to one thousand rat units divided into one hundred rat units.

It is apparent that the higher developed

the animal becomes the higher the percentage of abnormal conditions arise. This likely is brought about by the fact that the higher the development the larger per cent of physically unfit are saved, consequently the increasing disability proportionately. The gynecologist is faced with the problem of rehabilitating the female sexual apparatus and to overcome the best he may those symptoms that have not required surgical measures but have invalidated many women. And it would seem that we have or are about to arrive at the point where many of these sufferers may receive great relief.

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#### DIVERTICULUM OF EPIGLOTTIC VALLECULAE: REPORT OF TWO CASES

Carl Goldmark and Thomas Scholz, New York (Journal A. M. A., June 4, 1932) report two cases of diverticulum of the epiglottic valleculae, which are two depressions situated between the base of the tongue and the epiglottis, one on each side of the median glosso-epiglottic ligament. These diverticula seem to occur at an advanced age and may possibly be due to a loss of elasticity of the epiglottis. Clinically they are characterized by a feeling of a lump in the throat after eating, with discomfort on swallowing, occasional regurgitation of foul material, swelling in the submaxillary region, and local tenderness, with no laryngologic changes. Fluoroscopically the condition can be definitely diagnosed, especially if the observation is prolonged. The roentgen examination reveals enlargement of the pre-epiglottic space as outlined by the barium mixture, unusual spastic contractions of the epiglottic region, and persistence of the pre-epiglottic shadow for several hours. The authors have no therapeutic suggestion to offer. The discomfort may be alleviated by frequently gargling with plain water after meals.

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#### NONRACHITIC CUPPING OF LONG BONES IN THE NEW-BORN: ROENTGENOLOGIC AND CLINICO-PATHOLOGIC STUDY

In a series of forty-eight new-born Negro infants examined by John T. Farrel, Jr., Philadelphia, and Edward F. Burt, Ardmore, Pa. (Journal A. M. A., May 21, 1932), cupping of the long bones was found in seven; of these, unmistakable evidence of clinical rickets appeared in four from five to thirteen weeks after birth. A similar deformity was found roentgenographically in still-born infants, but on histologic examination there was no microscopic evidence of rickets. The cupping was due to a concave variation from the usual normal straight or convex line at the junction of the zone of proliferating cartilage and the zone of preparatory calcification. On the basis of their observations the authors conclude that roentgenographically recognizable cupping is sometimes present normally in the ends of the long bones of new-born infants, caused by a normal variation in the manner in which the zone of preparatory calcification joins the zone of proliferating cartilage.

#### CANCER OF THE UTERUS—ITS PREVENTION, DIAGNOSIS BY BIOPSY AND PRINCIPLE OF TREATMENT.

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##### I. PREVENTION

##### A. CERVICAL LESIONS

The best treatment for cancer of the uterus is prevention.

From 95 to 98 per cent of cancer of the cervix occurs in women who have had pregnancies and of the remaining 2 to 5 per cent most have had operative manipulation of the cervix. Therefore, chronic irritation or trauma must be a decided predisposing factor.

The prevention of cancer of the cervix consequently entails the proper treatment of the multiparous cervix. Obviously the most effective manner of preventive therapy lies in removal of the cervix, which was to have been the site of future cancer. This can easily be accomplished by simple amputation. This is an obvious fundamental fact to be gravely considered when treatment is anticipated for the multiparous cervix, which either by deep lacerations or inflammation, or both, shows evidences of overgrowth of its epithelial structure.

Much has been worthily said about the value of cauterization, tracheloplasty, and the Sturmdorf or Bonney type of operation, but from the standpoint of cancers, none can rationally or actually compare with amputation, which means removal of all the structure which was to have been the site of cancer, whereas in other methods there is no certainty of entire removal or destruction of the dangerous tissue.

Franz Spirito, of Siena, Italy, has for years advocated amputation as prophylaxis against cervical cancer. He has never seen a cervical cancer in the scar following amputation, nor has he found a single case reported in the literature. This has been my own experience and that of all to whom I have talked about this problem.

I do not wish to be misunderstood as a radical, who would propose the removal of all multiparous cervixes. The great majority of them do not need any radical attention. Many with small erosions and mild inflammation, and even with mild hyperplasia of the endocervix, can be treated satisfactorily with the actual cau-



tery. However, it must be remembered that the cautery, like many other excellent forms of therapy, has its limitations.

In younger women, with lesions not adaptable to cautery therapy, reparative operations, such as trachelorrhaphy or partial amputation with the Sturmdorf or Schroeder procedures are effective in restoring normal form and function. Some idea of their prophylactic value may be gained from such reports as that of Graves. He studied the hospital records of 4815 cervical repairs, including trachelorrhaphy, amputation and cauterization and was able to find seven cases that later developed cancer. None of these followed amputation. In three the pathologist had overlooked a cancer in tissue removed at trachelorrhaphy. He then had four cases of cancer developed subsequent to operation. Studying the subject from another angle he found that of 538 cases of cancer, twelve patients had had a previous repair of the cervix. There were only nine after exclusion of the three mentioned above in which the pathologist had overlooked the cancer in the removed tissue. Of course it must be remembered that with a perfect "follow-up" of the entire 4815 patients, more cases of cervical cancer would unquestionably have been discovered. But on the other hand, it is good evidence that timely reparative procedures are effective, though not perfect prophylaxis against cervical cancer.

It is my feeling that amputation should be done much more frequently than at present. From the standpoint of cancer prevention it is by far the method of choice. Every woman who has deep lacerations with erosions and hyperplastic endocervix, or who has a chronic inflammation of the entire cervix with hyperplasia of the epithelial elements, would best have amputation if she would avoid the greatly increased possibilities of malignant changes. Women who have families, are 36 years or more of age, and who have extensive chronic lacerated cervicitis, in my opinion, deserve this protection.

One of the advantages of amputation lies in the fact that most women will not carry out the advised plan of frequent routine examinations. Amputation of a "suspicious" cervix, in indicated cases, gives added safety in the presence of this human failing. However, one certainly would not suggest any method as a substitute for the tremendous value of routine examinations.

In this respect it is important to call attention to the fact that true "early" carcinoma of the cervix is symptomless and that it is also almost impossible of clinical recognition. This is substantiated by the reports from reputable large clinics which show that in the great majority of "early" carcinoma of the cervix the diagnosis is accidentally made by routine microscopic examination of specimens from cervical operations.

#### B. SUBTOTAL, (SUPRACERVICAL) HYSTERECTOMY

The question of a subtotal or a complete hysterectomy is a natural sequence to this discussion. When a subtotal hysterectomy is done there are three possible futures for the remaining cervix.

1. No pathological changes. This is especially true in nulliparous women with normal cervixes—and also in many multiparous ones where there is little if any pathology of the cervix.

2. Unrecognized carcinoma may already be present in the cervix and blossom forth after the operation. A case demonstrating this possibility is that of:

Mrs. L. W. She was a married woman of 53, referred because of menorrhagia and fibroid tumors. The youngest of her two children was 27. She had been examined by two other physicians. All of us thought the cervix was a non-malignant hypertrophic multiparous one. The other physicians felt this so strongly that they advised subtotal hysterectomy, seeing no advantage to removal of the cervix. However, because of the suspicious nature of the cervix, complete abdominal hysterectomy was performed on June 2, 1931.

The pathologist reported a small localized area of squamous cell carcinoma of the cervix. While still in the hospital intra-vaginal radium therapy and external X-ray was carried out.

On recent examination the patient shows good general health except for an old hypertension, and there are no evidences of recurrence.

3. Carcinoma may develop years later. In the many statistical reviews reported, this group and those of the second group comprise roughly 2 per cent of all cases in whom subtotal hysterectomy has been done for fibromyomata. A case in illustration of the third group is that of:

Mrs. W. B. She was a married woman of 29, complaining for two months of vaginal blood after coitus. No known pregnancies.

History of irregular profuse menstruation for

which the following operations were done in the South.

a. Ten years before—removal both tubes and part of ovaries with no improvement.

b. Nine years before—D. & C.—no improvement.

c. Eight years before—D. & C.—no improvement.

d. Six years before—subtotal hysterectomy, bilateral oophorectomy.

Examination showed the posterior lip of a small cervix entirely replaced by a large papillary bleeding growth. Biopsy microscopic diagnosis: Spinous cell carcinoma cervix.

Between October 26, 1930, and November 10, 1930, she was given large, divided dosages of intravaginal radium and external X-ray.

On routine follow-up examination March 26, 1932, she had good general health with gain in weight and no evidence of metastases or recurrence.

Need it be said that, in those patients who, because of other pathology, for example fibromyomata, require hysterectomy, a complete hysterectomy should be done in preference to subtotal in all cases where the cervix is the site of lacerations, erosions, hypertrophy or cervicitis? While the operation is technically a little more difficult, the mortality, in capable hands, is very slightly, if any, greater. The substitutes of coring out the cervix, cauterization of the stump or subsequent removal are all poor substitutes, but may find application in individual cases.

#### C. POLYPI, HYPERPLASTIC ENDOMETRIUM AND MYOMATA

It is the consensus of medical opinion that adenocarcinoma of the uterine body is not a disease excited by trauma or chronic irritation, but rather by ovarian dysfunction. This is also true for hyperplastic endometrium and myomata.

Bleeding at the menopause is the signal for deliberate judgment in order to prevent future carcinoma of the fundus.

The radical therapy commonly accorded myomata may be a blessing in disguise in that it removes the future location of an adenocarcinoma.

It has long been known that polypi, which are overgrowths of the endometrium, degenerate to form adenocarcinoma. Their removal by curettage or hysterectomy is prophylactic prevention of cancer, and fortunately to this good end, most of them present the symptom of menorrhagia which warrants radical removal that would not be granted a chronic cervix

which had far greater probability of cancerous degeneration.

Meyer, of Germany, and Taylor, of New York, have presented an excellent case for the association between hyperplastic endometrium and adenocarcinoma. Thorough curettage and irradiation, or hysterectomy are excellent prophylaxis against a future cancer.

## II. BIOPSY

The second best treatment of cancer of the uterus is early positive diagnosis which automatically brings forth the question of when and how to do a biopsy.

Microscopic diagnosis is the only absolutely certain diagnosis of cancer. However, many are so evidently cancer from clinical investigation that the pathologist's examination is a matter of routine confirmation. Many others are clinically suggestive, but not clearly enough to warrant the most astute diagnostician to apply the radical therapy necessary in cancer. These two groups should be distinguished in deciding when to do a biopsy.

It must be constantly remembered that biopsy is not without danger. With the greatest care there still remains the probable spread of the disease by lymphatic or direct extension. It should be emphasized that biopsy is never, in any sense, a substitute for careful, complete gynecologic history and examination.

#### A. CARCINOMA OF THE CERVIX

Distinction must be made between clinically evident and clinically questionable carcinoma.

1. *Clinically evident carcinoma*—should, because of the useless danger of consequent extension have no biopsy until at the time of the ultimate treatment, whether surgery or radium, and this only a small area for confirmation, record and prognosis. In other words, it should be emphasized that it is not only a useless but a dangerous practice to take a biopsy prior to treatment in the clinically evident cancer. We must insist that biopsy and irradiation or surgery take place at the same time. If this policy is not followed, it is decidedly unfair to blame the irradiation or surgery for poor results which are, in reality, due to this early improper handling of the disease. A competent consultation prior to treatment is far preferable and decidedly less apt to produce greater extension.

While maintaining an open mind about



the choice of therapy, most gynecologists in America feel that irradiation is better in all grades and classes of this disease. A confirmatory biopsy done at the time of irradiation should contain only enough tissue for examination. The pathologist has made such a forceful case for securing large amounts of material that there is a tendency to excise extensive areas of perfectly evident cancer, forgetting the dangers of extension and also an important related fact about the basic protective pathology of these lesions. Most cancers are secondarily infected, and there is a distinct inflammatory zone protecting the normal tissue from this toxic absorption and infection. The confirmatory biopsy, performed only at the time of irradiation, should most certainly be superficial to this protective zone if we are to avoid severe radium reactions, which necessarily limit us in giving adequate radium and deep X-ray therapy.

Two recent cases of moderately advanced cervical carcinoma, clinically almost identical, graphically demonstrate this precaution. Mrs. A. D., had two applications of radium for a total of 6200 milligram hours and a series of X-ray in a ten day period with very slight reaction and hospital stay of only thirteen days. Shortly after leaving the hospital she resumed her usual habits. In her case only a superficial area of the cancer was removed for diagnostic confirmation.

The second, Mrs. E. G., had an extensive biopsy and cauterization before being referred. She developed the usual para-metritis but it was felt that treatment of the cancer was imperative in spite of this, even knowing that it would exacerbate the inflammation. Through a period of three weeks it was possible to give 4000 milligram hours of radium therapy. Her total hospital stay was one month, and after discharge she is still, at the end of another month, a semi-invalid, though the cancer has disappeared from the cervix and the parametritis improved. In spite of all this we feel that she is inadequately treated for the disease which caused her admission and she will return for additional therapy.

2. *Clinically questionable carcinoma.* If, after careful clinical investigation, the cervix is suspicious, biopsy should always be done immediately. The cervix is relatively insensitive, and this procedure can most often be done in the office. A very convenient and practical method is that of grasping the suspicious area with a "so-called" double hook tenaculum, *i. e.*, a tenaculum with one hook on each blade, and cutting out a wedge shaped portion of tissue with long scissors, curved on the flat. In this way the procedure is completed under direct vision, and the specimen is of the right size, and from the desired location. Searing the wound with the cautery is to be recommended to stop

hemorrhage and to prevent possible extension.

However, one must not have too great a sense of security from a negative biopsy report and consequently allow patients to drift away from routine examinations. There may already be cancer present in another location than the one excised. Likewise, one section from a biopsy paraffin block may be benign and deeper in the block the evidence of malignancy be clear. These accidents are indeed not rare. A positive biopsy of the cervix is very helpful. A negative biopsy in a suspicious cervix gives mental comfort to patient and doctor, and usually indicates absence of cancer, but it is not a staff upon which to place the whole body's weight.

#### B. ADENOCARCINOMA OF FUNDUS

A distinction must be made between bleeding occurring after the menopause and that at the menopause.

1. *Bleeding after Menopause.* Elderly women who begin to have vaginal bleeding one or more years past the menopause and in whom no source for bleeding can be discovered in the vagina or cervix have a presumptive diagnosis of carcinoma of the uterine body. If the uterus is increased in size, hysterectomy may be done without preceding curettage for two good reasons: (a.) Shortened anesthesia and operative procedure in the elderly where this is most important. (b.) No increased dilatation of cervix to allow outpouring of cancer cells and cancer juice during hysterectomy.

An example of such procedure is Mrs. R. A., a woman of 68, who passed the menopause 25 years before examination. Chief complaint was bloody vaginal discharge of 5 months duration. No loss of weight or strength and she felt her general health was fairly good.

Examination showed no pathological source of bleeding in the vagina or cervix. The fundus was slightly enlarged, globular in shape and mobile.

On May 28, 1931, with no preceding curettage, complete abdominal hysterectomy was easily performed in forty minutes, under ether anesthesia.

The specimen consisted of a uterus about three times normal size, soft and globular. It contained about two ounces of thin "cancer juice" which poured out on section. The fundus was occupied by a moderately advanced adenocarcinoma, proven by microscopic diagnosis.

The operative reaction was very mild and recovery rapid, much more so, we think, than had she had prolonged anesthesia with preceding curettage.

She now has gained weight and has no evidence of recurrence.

I would not quarrel with one for insisting on preceding curettage, but I would

insist that hysterectomy must be done under the same anesthesia. It is my feeling that in clinically positive cases, the shortened anesthesia and reduced procedure in elderly patients is significant in reducing complications and mortality.

2. *Bleeding at the Menopause.* Women who have metrorrhagia or unusual menorrhagia at the menopause or even in the late thirties should have the protection of a diagnosis curettage. This is the group in which much harm can be prevented by the use of the curet. Care should be taken to get endometrium from all areas of the cavity and the pathologist should make several slides in order not to miss an area of malignancy located at another level in the paraffin block.

Cases are reported who have had non-malignant diagnosis of curettings, who soon afterward developed unquestioned adenocarcinoma of the fundus. In some of these, deeper sections into the original paraffin block showed the previous existing malignancy. Others undoubtedly were missed because the area of malignancy was not removed through incomplete biopsy diagnostic curettage.

With these two precautions in mind the diagnostic curettage in bleeding at the menopause is the foundation stone of early diagnosis of cancer of the uterine body. Unusual bleeding at the menopause is not "just the change," but it is the signal for caution.

### III. PRINCIPLE OF TREATMENT

Certainly the least important phase of treatment of cancer of the uterus is the proper choice and execution of therapy, yet this is of no small importance.

Unfortunately the only present methods for treating cancer are both local. This means either removal of all the growth by surgery or destruction of all the growth by radiation. There is no reasonable doctor who would not agree that complete removal is decidedly the method of choice. However, the application of this fundamental principle is controlled by the nature of the tumor and the anatomy involved. Cancer of the uterus offers an excellent demonstration.

Adenocarcinoma of the fundus uteri is a relatively slow growing tumor and likewise is slow to produce lymphatic metastases. Recognized months after the appearance of symptoms, a panhysterectomy completely removes the cancer in the ma-

jority of cases. So much so that the recognized five year cure rate is between 60 and 70 per cent. I see no rationale for the radium enthusiasts who would treat any but far advanced inoperable cancers of the uterine body with radio-therapy alone. Adenocarcinoma of the fundus is more radio-resistant than carcinoma of the cervix. If we would consider the results in the very similar carcinoma of the breast it is plausible to suppose that irradiation destroys many of the cancer cells, but only embeds many others in dense scar tissue, very much as an arrested tubercle, where they are still present and live even in a "radiation cure."

In the surgical treatment of cancer of the uterine body it would seem wise to call attention to an often neglected precaution in technique. This is the care to avoid using any grasping instrument on the fundus for the purpose of traction. These instruments, either by trauma or direct contamination, are conducive to spread of the disease. The traction can be adequately obtained by forceps applied to each broad ligament close to the uterus, and this procedure is not subject to the above danger.

Entire surgical removal of a carcinoma of the cervix would be ideal. However, cancer of the cervix grows rapidly, invading closely surrounding vital organs, and metastasizes early. Proof of the early metastases of this disease is obtained from the reported cases of surgical removal of "early" carcinoma, even before extension to the surrounding structures. These show that 35 per cent already have metastases.

With this rapidly growing and metastasizing tumor, located in the very midst of the urinary and intestinal tracts, we have resorted to radio therapy instead of surgery, not from choice, but from necessity.

### SUMMARY

#### I. PREVENTION

1. Cervical amputation is the most perfect available means of cervical cancer prevention. This protective procedure, in my opinion, should be more widely employed than is the present custom.

2. Cervical reparative operations, including trachelorrhaphy, partial amputation and cauterization, offer effective, though not perfect, prophylaxis against cervical cancer.

3. The remaining cervix after subtotal (supracervical) hysterectomy is subject



to the definite possibility of malignant changes. The cancer may already be present at the time of hysterectomy, but too early to be clinically recognized. It may develop much later. A case to demonstrate each possibility is given.

4. When hysterectomy is indicated for another cause and there is also present pathology of the cervix, the cervix should also be removed, *i. e.*, a complete hysterectomy in preference to subtotal should be performed in that situation.

5. The radical treatment commonly accorded endometrial polypi, hyperplastic endometrium and fibromyomata may be a blessing in disguise, in that it may frequently remove the future location of a uterine fundus adenocarcinoma.

## II. BIOPSY

1. Clinically evident and clinically questionable carcinoma of the cervix must be distinguished in deciding when to do a biopsy.

2. In the clinically evident cases, biopsy should not be done prior to treatment. In clinically questionable cases it should be done at once.

3. In clinically evident cases biopsy for diagnostic confirmation is to be recommended at the time of treatment, but only a small superficial portion of tissue, because large sections frequently mean destruction of the protective inflammatory zone, surrounding the infected tumor. When this occurs, the following obstinate parametritis interferes greatly with adequate radio therapy, not to mention the probable consequent extension of the original disease. Two cases are cited to illustrate this danger.

4. In a clinically questionable carcinoma too great a sense of security is not to be derived from a negative biopsy report.

5. Elderly women, who have vaginal bleeding, but in whom it is impossible to discover a source for the bleeding in the cervix or vagina, and in whom an enlarged uterus is found, have a presumptive diagnosis of uterine body malignancy. In these elderly patients it is thought that elimination of preceding curettage is justifiable, because of the resultant shortened anesthesia and procedure.

6. In performing diagnostic curettage for bleeding at the menopause two precautions are given: (a.) The importance of obtaining endometrium from every area of the uterine cavity, and (b.) The pos-

sibility of missing a cancer in curettings because too few slides were made from the mass of curettings incorporated into a single paraffin block.

## III. PRINCIPLE OF TREATMENT

1. Removal of the entire cancer of the uterus is decidedly the method of choice.

2. This is possible in the majority of instances of adenocarcinoma of the fundus uteri, because the tumor is slow to grow and slow to metastasize and because the anatomy is such as to permit the necessary surgical procedure.

3. Removal of the entire growth is unfortunately rarely possible in carcinoma of the cervix and radio therapy is employed instead of surgery, not from choice but from necessity. This is due to the fact that the tumor grows rapidly and metastasizes early and the fact that the anatomical location in the midst of the urinary and intestinal tracts makes the necessary surgical procedure, even where possible, extremely hazardous.

## DISCUSSION: *Dr. Pat Fite, Muskogee.*

I want to say just a few words by way of accentuation more than for any other reason. I want to call your attention to the fact that one out of every eleven men die after forty years of age of cancer, and one out of every eight women. Cancer now has the fifth place in the mortality rate. The difference in the mortality rate between men and women is because women have a different biological function in life and the associated function of lactation. The deaths are largely due to cancer of the cervix. These cases of hypertrophy of the cervix come on rather slowly. The obstetricians recognize that. They take care after delivery, and most of them never reach this stage of hyperplasia that Dr. Long spoke of. A paper of this sort should be read before the general section, because a large number of women are handled by the general practitioner and not by the obstetrician in larger places. I am heartily in accord with what Dr. Long had to say. I agree with him that radium in these cases is probably the most advantageous form of treatment. The first woman I treated in 1922, a border line case, is now well as far as we can tell. I don't think that many of these cases should be turned down for treatment, but should be given radium. You will sometimes get surprising results in hopeless cases. Unfortunately, many do not come until they are in

the hopeless stage where operation is entirely out of the question, often due to the patient, but far too often that doctor to whom they have gone has not examined them. I know of a woman who was examined by a doctor for metrorrhagia, but he did not make a vaginal examination. She returned three months later with an inoperable case of carcinoma of the cervix. In my own personal experience, not many of these cases come in the early stages. I don't know why it is; with all the prospect of relief, it is almost a phenomena how few come.

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*Dr. W. H. Livermore, Chickasha.*

This is a very timely paper, Dr. Long, and a very interesting one. There is only one phase I want to speak of and I want to emphasize that more than anything else. There was a time in my mind when I considered a biopsy of an absolute necessity before diagnosing cancer of the cervix, but as my experience grows in that, I have come to the conclusion for myself that I do not want a biopsy on any suspected cancer of the cervix. I have been through that period with some lamentable experiences that I feel I would not have had if I had not insisted on biopsy. An unrecognized cancer of the cervix that you cannot tell from a history and from your findings of the case is better to be left alone, because it will show that soon, but if you haven't got a condition it had better be left alone than make a biopsy because you are not sure just where the condition is and may miss it altogether or the pathologist may miss it when he sections the tissue, and you will have increased danger of metastasis. Cervical cancers form metastasis rather slowly, and after we get that in the cervix we have a serious condition. Now, I am not fearful of cancer of the cervix. I belong to a particular clinic where we get them early. In the last ten years we have been using radium a great deal and I have confined myself completely to radium in cervical cancer, and I can say this—I have many more patients living, without recurrence, than I ever had before. Time may have something to do with that but it doesn't have all. A biopsy is a nice thing to have, but if you can't make a diagnosis without biopsy I think a patient is safer to let them go.

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I am just like the gentleman just preceding about biopsy. I don't think a biopsy

should be made where you can't make a diagnosis of cancer of the cervix without biopsy. If you make a diagnosis, well and good, you can begin your radium earlier. But wait until you amputate the cervix and that is a most serious proposition, and if it proves to be cancer, perhaps you have amputated high enough to get your tissue out, but if you biopsy today and wait until process goes on and the patient shows temperature and things of that kind, you may rest assured that cancer has extended on beyond all radium or surgical procedure.

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*Dr. Pigford, Tulsa.*

I want to speak a word about getting a biopsy and following that up with the coagulation diathermy button. I think in a great many of these cases after biopsy by scissors and knife if you use electrodiathermy you seal the avenues of dissemination of the tissues. We have been doing biopsy before using radium, and then using radium to extend completely over the destroyed tissue as far as we can see. We have been using diathermy and destroying all the tissue, and a few days later following that up with radium, feeling that we have destroyed the tissue as deeply as possible, and we find that apparently gets good results.

I cannot declare too strongly, Dr. Long, that I have enjoyed your excellent paper. Early carcinoma of the cervix is not a clinical matter in diagnosis but a microscopical finding, and you cannot diagnose without biopsy. Most of these patients, eighty-five per cent, reach you at a stage where operation or radium either give very poor results. One reason is fear in the mind of the average individual as to the ultimate outcome of cancer. A few years ago the individual with tuberculosis prepared himself to die. Now we know that is not necessary. We follow the advice of the physician sufficiently early when he first finds the disease, and a large percentage of cases are now without the form of fear which previously existed that death is the absolute outcome. The eighty-five per cent of cases are obviously cancer; anyone can diagnose them if they see them and use a speculum. It is an unfortunate committure that a large number of cancer patients have been examined without the proper light and without a speculum. They have been told to take douches and were allowed to go on, and there has been a rapid spread of carcin-



oma to the extent that nothing could be done. If these patients were examined properly and if the men examining them train themselves to diagnose early stages, biopsy properly performed and properly examined would mean a lot. I will go further with Dr. Long in stating that the biopsy should be examined by a competent pathologist. It is only by classification of these tumors that we can determine the treatment. We have the mature, the transitional type of tumor which is more malignant and spreads more rapidly, and the spindle-cell carcinoma that metastasize more rapidly and produce death. The interesting thing about these tumors is that the mature type of cells are not amenable to surgical treatment, and early carcinoma would yield excellent results by total hysterectomy. On the other hand, in dealing with the transitional type and the spindle-cell type, these metastasize more rapidly and would be greatly amenable to X-ray and radium treatment.

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*Dr. Kenneth Wilson, Oklahoma City.*

This is an interesting discussion of a serious malady in women. It accounts for thirty per cent of all gynecological deaths; as you know, this has to do with women. Whatever may be the causes of cancer, all will agree that irritation is the most common. Carcinoma of the cervix, we know, is in that field and those that see a number of cervixes know that eight out of ten women examined show evidence of cervical infection. The development of electrotherapy has made it possible for the general man to clear up this most prevalent cause of malignancy by simple office treatment by electrotherapy. I believe if the profession as a whole will take care of these infections of the cervix in younger women, the incidence of malignancy of the cervix will be materially lessened.

*Dr. Long:* I am very delighted to have so much discussion upon this problem because it seems important to me. I am glad that Dr. Wilson emphasized in this discussion that the disease is too prevalent. We all know that the five year cures of carcinoma of the cervix in all classes runs between twenty-two and twenty-five per cent, but, where amputation before development of cancer is done they live in about one hundred per cent of cases. The discussion has been principally on biopsy, which as Dr. Livermore remarks, is a definite problem. It is so much of a problem that I feel we have to be certain about it.

In other words, are any of us, including Dr. Livermore, so absolutely certain in our diagnosis that we can carry out radical measures which means entire removal of the uterus and the surrounding lymph nodes or extensive radiation. So I feel that even in seemingly evident cases that a small superficial biopsy is not only of important diagnostic value but also important to the patient before radical measures be carried out. I do not agree that we should wait; I do not believe that these cases should be allowed to run along until the early carcinoma becomes a border-line carcinoma. With treatment by radium the early case has an eighty per cent chance in five years, while the border-line case has a twenty per cent chance of being alive in five years. I feel that justifies small biopsies in suspicious cases. I am afraid one gentleman did not understand about amputating the cervix. If there is a distinct question of carcinoma of the cervix, a small biopsy should be taken, and frozen section done at the time, before you decide to do an amputation or apply radium. In other words, amputation is a most inadequate procedure for cancer that is already present. It is ineffective in the treatment of even early cancer. The dangers about the use of biopsy and cauterization are, first, the fact that the carcinoma extends beyond the productive inflammatory area which shields carcinoma and also interferes with the lymphatic vessels; it destroys the tissue immediately around the recognized carcinoma, but, frequently, there has been further metastasis, even in the early carcinoma of limited surface. I do not feel that it is justified to apply heat that does not extend out into the tissue, whereas heat if properly applied includes all lymphatic drainage area. If operation is performed, as has been mentioned, where that does not include radical complete hysterectomy it does not remove the surrounding lymphatic drainage, which as has been pointed out, have metastasis in forty-five per cent of the early cases. There are two more points I want to mention. The first is the question of the rather general use of biopsy. If a man is not doing any more careful work than to avoid the use of a speculum in questionable cases of carcinoma, then I would feel that he has not made a sufficient examination to make a biopsy. There is no question but that the capable obstetrics being done at the present time and the use of the electro-coagulation cautery, etc., have done a great deal to reduce inflammatory

lesions of the cervix. Amputation should be limited to the rather large number of cervices that have decided hyperplasia.

### PAY YOUR DOCTORS

The good doctors of this community are deserving of prompt reward for faithful services rendered. These "servants of humanity" are the worst imposed upon set of professional men known. It is just as necessary that you pay your doctor as your grocer. The depression has hit the doctor harder than it has anyone else. He handles less money than he ever handled before. If you owe your doctor anything, pay him something on account—you may need him soon.—Eufaula Indian Journal.

We fully agree with the above. Probably the lawyers and ministers are giving away some of their services but you do not hear of a banker, grocer, dry goods man, plumber or carpenter, looking after people who are down and out. McIntosh county, since the writer has been a child, has been blessed with unusually good physicians. The mere fact that it is a "country town" means nothing. The doctors in that county, as a rule, are fairly above the average, and the writer happens to know that they are carrying more than their share of the effects of the depression, and they will continue to carry them, therefore, we say to this kind estimate of the medical profession in that county—Amen.

### RELATION OF PRIVATE MEDICAL PRACTICE TO PUBLIC HEALTH IN EUROPE

Frank G. Boudreau, Geneva, Switzerland (Journal A. M. A., August 27, 1932), reports the results of a study which shows that in the principal European countries today, society is recognizing to an ever increasing degree its public responsibility for the health of all classes. The public authorities are laying increasing emphasis on the adequate provision of medical treatment as the basis of the public health. The private practitioner is being drawn yearly into a closer relation with the government and its public representative authorities. No difference of opinion can be held as to these facts. This change in the relationship between society and the doctor has from time to time created friction and dissatisfaction, usually most intense at the beginning of any social or medical reform. This dissatisfaction has died down, as a general rule, with the passage of time and the introduction of modifications suggested by practical experience. The least dissatisfaction is found where the medical profession is conversant with public social and medical problems and is united into strong but not narrow professional groups, and where the public authorities keep the doctors in touch with the purposes of their proposals. In the countries where society has made the greatest demands on the doctor, where the old forms of private practice have most diminished and where the socialization of medicine has made the greatest progress, the moral and material position of the doctor has not visibly suffered. On the contrary, he is often more highly regarded and his reward is relatively greater in proportion to the heavier but more honorable social responsibilities which he has been called on to assume.

### ✓ CHOLELITHIASIS\*

I. B. OLDHAM, SR., M.D.  
MUSKOGEE

### ETIOLOGY—CLIMATE AND TEMPERATURE

There can be no doubt that climate and temperature have some influence on the formation of gallstones, as they are comparatively rare in hot climates, and become much more common in cold countries. Cold and damp have some influence in causing catarrh of the gall-bladder.

*Sex*—Sex is an important predisposing factor, as the condition is found, when large numbers are compared, three times as often among women as among men. Females, oftener than males, are the victims of constipation, faulty methods of clothing, sedentary habits, lax abdomens, tumors, and tight lacing; pregnancy, also, is a frequent factor.

*Age*—As to age, in a series of statistics, it is found that 75 per cent of cases occur after forty years of age, and 25 per cent under this age. The largest number are met with between fifty and sixty. Under twenty there is only about 1 per cent.

*Race*—With regard to race, it may be said that negroes seldom suffer, and the same is true of the Egyptian. The natives of India are about half as prone to the affection as the white inhabitants. England and America are about equal, with approximately a 7 per cent incidence. The people of Russia, Sweden, Hungary, Austria and Germany yield the highest percentage of sufferers.

*Heredity*—Heredity is held by some to play an important part, and by others to be quite negligible. The tendency to gout, obesity, indigestion, and indolent habits may constitute family characteristics, and afford some foundation for the belief in the heredity of gall-stones, as such persons are predisposed to the complaint.

*Occupation*—Occupations play an important role, as the sedentary, such as clerks, writers, certain kind of business people, inmates of asylums, homes for the aged, and workhouses, yields a larger percentage of victims than those leading an active life.

*Diet*—Diet is a factor in the production of gall stones, more by indirect than direct

\*Read before a joint meeting of the Muskogee and Okmulgee-Okfuskee County Medical Societies, at Okmulgee, Oklahoma, on October 10th, 1932.



influences. Errors in diet may cause intestinal trouble and, eventually, cholecystitis, the chief cause. Excessive eating is causative in this way. It has been stated by some that starchy foods favor the formation of gall-stones, while a protein diet has the opposite effect. It must be remembered that in countries where rice is the main article of diet the disease is rare; and in temperate and cold climates where more meat is consumed it is more common. The free use of fats is said to be a cause, but the excessive consumption of fats is liable to cause a catarrhal condition of the intestinal mucosa. Upon the whole, therefore, it is a question mainly of the excessive use of any food and abuse of alcoholic beverages rather than the kind. The restricted intake of water is certainly causative. In a word, everything that favors stagnation of the bile favors the production of gall-stones.

*Exciting Cause: The Organisms—Bacteriology*—It is now admitted that the gall-bladder or intra-hepatic tubes must first become infected.

The organisms responsible for this condition are the colon bacillus, the bacillus typhosus, and mild strains of the streptococcus and staphylococcus. An inflammation results, which in turn favors the formation of the calculi. It is now observed that severe and acute inflammatory processes do not give rise to gall-stones so readily as mild and chronic inflammations. Mere obstruction in the flow of the bile is not alone effective, for there must be a catarrhal inflammation and an overproduction of cholesterol.

*Distribution in the Body*—There has been much discussion over the route by which the bacteria reach the biliary tubes and the gall-bladder. By some they are thought to pass up the common and cystic ducts to the gall-bladder, or the hepatic ducts into the liver, in the instances where calculi have been found in these ducts. There are objections to this ascending theory, such as the bacteria making their way against the flow of bile, and the escape of the pancreatic duct which communicates with the ampulla, as does the common duct. Others have suggested that the organisms are carried to the liver by the blood stream. This would explain those cases of calculi in the intrahepatic ducts. Bilirubin calcium calculi may form in the intrahepatic ducts and be carried by the bile into the gall-bladder, constituting the neuclei around which the cholesterolin

gathers. These infective inflammations lead to the excess formation of bilirubin calcium and cholesterolin; and these elements, with the coloring matter of the bile, mucus and broken down cells, combine in various proportions to produce the different types and sizes of biliary calculi.

*Diagnosis*—The essential consideration in diagnosis is the differentiation of hepatic colic from other forms of abdominal pain.

Gastralgia is usually relieved by vomiting, and may be traced to errors in diet. It is not often accompanied by vomiting, and there is not the same degree of collapse. In gastralgia the patient usually lies in the prone position, but in gall-stone colic the tendency is to roll about.

In gastric and duodenal ulcer there is the definite relation of the pain to the taking of food in these conditions. In gastric ulcer blood may be found in the vomit, and in the stools in duodenal ulcer. In both there is an absence of jaundice, distension of the gall-bladder, or calculi in the stools.

In lead colic there is obstinate constipation, the blue line on the gums, the presence sometimes of wrist-drop, and the history of an occupation that makes lead-poisoning a probability.

Renal colic is characterized by the direction of the pain down into the genitalia, the presence of blood or pus in the urine, and the passage of a calculus in the urine. There is also the absence of the signs due to biliary obstruction.

The crisis of locomotor ataxia are accompanied by the other symptoms of the disease, such as the ataxia, the condition of the pupils, the loss of the knee-jerks, and the inco-ordination of movements.

Mucous colitis can be differentiated from other conditions by the nervous symptoms, and the occurrence of the mucous casts in the stools.

Appendicitis is found present in about 30 per cent of gall-stone cases, and gall-stones are found in about 10 per cent of appendicitis cases. The four cardinal symptoms of appendicitis, namely, tenderness at McBurney's point, elevation of temperature, rigidity of the abdominal muscles, and vomiting, should prevent mistakes.

Acute pancreatitis is known by the sudden onset, the severe pain, the marked tenderness, persistent vomiting, profound

collapse, epigastric distension, and the absence of indican, leucin and tyrosin from the urine.

*End Results of Gall Stones*—Gall stones play sundry freaks with the patient. There may be numerous or only one stone in the gall bladder. Typical gall stone colic is an attempt of the gall bladder to empty itself; the gall stones may be small enough to become impacted in the cystic duct, preventing the emptying of the gall bladder, resulting in excess secretion of mucous, mingling with the bile and terminating in an acute cholecystitis. Again, there may be one or more large stones in the gall bladder that may float around in the gall bladder for an indefinite time, giving no symptoms; however, the single large stone may drop down over the mouth of the cystic duct, acting like a ball valve, preventing the emptying of the gall bladder, which, at times, is relieved by vomiting. Action of the diaphragm changing the position of the stones allow the gall bladder to empty. Where the gall stones are confined to the gall bladder alone, jaundice is seldom encountered; however, jaundice may follow an attack of gall bladder colic, being a result of congestion of the common duct. Where the common duct is obstructed by stones jaundice persists. A great many people suffering with gall stones never die from this disease, the gall stones being revealed on autopsy. Where complete obstruction of the cystic duct exists there are several peculiar freaks of nature in attempting to relieve this condition. One of the most common is breaking down of the gall bladder wall, resulting in rupture into the abdominal cavity, terminating in a general peritonitis. Another, where the degree of infection is mild the gall bladder may atrophy and the stones become incysted. The gall bladder may become attached to the small intestine, resulting in a fistula opening draining the gall bladder into the intestine or may become attached to the anterior abdominal wall and drain through the wall.

*Treatment*—We are familiar with the long existing palliating treatment of gall stones. Large doses of olive oil have long been used by some of the profession and the laity under the erroneous notion that it would dilate the biliary ducts sufficiently to allow escape of the stones. They will report to you that numerous greenish gall stones were passed. These greenish stones are usually green soap. In my opinion, surgical treatment is the safest procedure in gall stones. It has long been a disputed

question as to which procedure is best, the cholecystectomy or cholecystotomy. The objection to cholecystotomy is that many of these patients return for a second operation. The operation of choice at the present time is cholecystectomy. I wish to report three cases of ruptured gall bladder.

1. Mr. "A," age 55 years, with no previous history of gall bladder disease, lived in the country, being a country merchant. On Wednesday, he ate a large amount of cabbage; shortly afterwards seized with an acute pain in the abdomen, made his own diagnosis of acute indigestion and did not call a physician until Friday. When I saw him first he had a temperature of 102, distended abdomen, very tender over the region of the gall bladder, and I made a diagnosis of ruptured gall bladder; brought him to the hospital and opened the abdomen and found the gall bladder unprotected with numerous gall stones in the bile in the peritoneum cavity, with a result of general peritonitis. This patient died within twenty-four hours. I reported this case to remind us again that a ruptured gall bladder, like all other perforated viscus demands prompt operation.

2. Mr. "B," age 40 years, had had numerous attacks of gall stone colic. When brought to the hospital he was completely jaundiced and had been so for many weeks; clay-colored stools, very sensitive over the gall bladder region. This case was diagnosed as gall stones with obstruction of the common duct. He was operated and found with a perforated gall bladder with a large nest of stones just outside the fundus of the gall bladder wall, walled off.

In dissecting gall bladder from the liver, found a large nest of stones that had perforated the posterior wall of the gall bladder and were encysted between the gall bladder wall and the liver. Three large stones were found in the common duct. The gall bladder removed, common duct opened and the stones expelled and fish-tailed rubber tube sutured into the common duct. This patient made an uninterrupted recovery.

3. Mrs. "C," age 45 years; house wife. About twenty years ago had a spell of severe pain in the right side, ranging to the back. No history of other attacks until November 29th, 1931. Had cramp colic and very severe pain followed by jaundice after the fourth day. These attacks were associated with chills and fever. About two weeks after the attack began had a



large mass in region of gall bladder which persisted for several weeks, still having chills and fever and jaundice. After about four weeks this mass disappeared. At this time stools were clear color and contained a lot of mucous; chills and fever subsided and recovery apparently begun, jaundice disappeared. Two weeks following this, jaundice recurred accompanied by chills and fever and a mass apparently under the skin over the gall bladder, accompanied by redness and swelling, and, after a few days, was opened, discharging pus and bile. This continued until she was brought to the hospital on April 4th. Diagnosis of gall stones with a previous communication with the gall bladder with the small intestine followed by closure of this opening and rupture of the gall bladder through the abdominal wall. X-ray of the gall bladder demonstrated to me gall stones. The report of the roentgenologist is as follows: "Studies of patient's gall bladder region following ingestion of the dye demonstrates at two hours a large shadow in the region of the gall bladder with a peculiar mottling, which may be indicative of stones. If this is the gall bladder it is enormous in size." I pause here to state that we all know that where the cystic duct is completely occluded it is practically impossible to get a bladder shadow; however, in this case, the bile evidently had access to the gall bladder but its only escape from the gall bladder was through the sinus tract through the abdominal wall. On operation, the gall bladder incision, after going through the fat, found the fascia very much infiltrated, covering the entire length of the incision. Upon opening the fascia, found a number of small gall stones extravasated in the abdominal wall. Much to my surprise, upon entering the peritoneum I had no difficulty in separating the adhesions from the gall bladder, inflammation evidently having subsided to some extent, causing the reduction of the size of the gall bladder, elongating the sinus communicating with the abdominal wall, the sinus being about one inch long from the fundus of the gall bladder.

The gall bladder was found packed with stones and diverticulum of the gall bladder was adhered to the small intestine and packed with stones. The gall bladder was opened and stones extracted from the gall bladder down to the cystic duct. The cystic duct was distended and filled with small stones and three stones impacted at the juncture of the hepatic cystic and

common ducts. These stones were removed, the opening in the diverticulum was large enough to introduce finger. The stones in this diverticulum were pressed out from below, and a small rubber catheter used as a probe inserted through the diverticulum communicating with the small intestine. This catheter was also used as a probe, exploring the common duct, demonstrating after the removal of the stone, the duct was patent. The gall bladder was severed about one-half inch above the cystic duct opening in diverticulum and sutured over, leaving the common duct and diverticulum intact. Wound was closed with a small rubber tissue drain in the opening of the gall bladder. Patient drained an immense amount of bile through this drain for seven days, when the drain was removed. Sutures removed on the eighth day. After forty-eight hours, drainage was re-established through the wound for three days. Since that time the stool became dark and the jaundice began to clear up. Patient has made a good recovery.

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#### AGE OF FIRST MENSTRUATION IN MOTHERS AND DAUGHTERS

Harley N. Gould and Mary Raymond Gould, New Orleans (Journal A. M. A., April 16, 1932), report that in a group of women of two generations, chiefly from the Gulf Coast region of the United States, the daughters experience an onset of the first menses about three and one-third months, earlier, on the average, than the mothers. The age of the mother at first menses has a demonstrable effect on the appearance of the function in the daughter. The ages of the propositae at the first menses are correlated with those of their sisters. The effect of a warm climate on the appearance of first menstruation is not discernible. The groups studied were not large enough to show any very certain influence of the nationality of the ancestors.

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#### VALUE OF NEUROSURGERY IN CERTAIN VESICLE CONDITIONS

James R. Learmonth, Rochester, Minn. (Journal A. M. A., Feb. 20, 1932, gives a review of the nerve supply to the bladder and describes the method of exposing its sympathetic nerves. He considers sympathetic neurectomy indicated in cases of vesical paralysis, in which the lesion is situated in the parasympathetic pathway, and the sympathetic pathway is intact. The patient must be continent and renal function satisfactory. Sympathetic neurectomy, alone or combined with a local procedure, has proved efficacious in dealing with spasmodic conditions of the neck of the bladder. Sympathetic neurectomy will relieve pain due to painful contractions of the bladder in about 50 per cent of cases; it does not directly relieve frequency.

## MEDICAL GYNECOLOGY\*

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The topic, Medical Gynecology, offers a wide latitude of choice, and in considering what phases of the subject would be of most value to you, I selected conditions which do not respond to the usual treatment. We have all had cases of obstinate benign bleeding and intractable vaginal discharge which have had us at our wits end as to what to do next. These are the types of cases which I propose to discuss.

In the discussion of benign uterine bleeding, I shall not attempt to include organic lesions, constitutional diseases, or conditions causing bleeding during pregnancy. The time will be devoted to functional bleeding, as this is the type in which the newer knowledge of pelvic physiology has its greatest application. In no other field of gynecology has such a consistent advance been made. As our ideas of pelvic physiology have been changed or clarified by animal experimentation, attempts have been made to apply this knowledge clinically. Any discussion of functional uterine bleeding, of necessity, requires a brief review of the experimental and clinical facts leading up to our present conception of pelvic physiology.

In 1849, Berthold showed that the secondary changes caused by castration of cockerels could be avoided by auto-transplantation of the excised testicle in the castrated cockerels. Very little was added to this knowledge until 1896, when Knauer succeeded in preventing atrophy of the uterus in castrates by implantation of the ovary. Halban, in 1900, demonstrated that the anatomical and physiological development of the genital organs is governed by the endocrine function of the ovary. He caused normal puberty changes in immature castrated guinea pigs by implanting the ovaries subcutaneously at the time of castration. In 1904, Simon demonstrated the importance of the ovarian interstitial tissue. He examined the transplants in which the ovarian grafts had been successful functionally and found that the follicles had degenerated. From this fact he concluded that the success of

the transplants was not entirely due to the ova-producing mechanism.

An accurate method for measuring the phases of the sexual cycle in laboratory animals was discovered in 1917 by Stockard and Papanicolaou. They ascertained that ovulation in the guinea pig is accompanied by marked hypertrophic changes in the vaginal epithelium which are easily detected by microscopic examination of the vaginal smear. The importance of this discovery becomes obvious when one realized that most of the subsequent research work on the ovarian hormone was done in laboratory animals and, the estimation of results was dependent upon this test of function. This test was confirmed in other animals by Allen, Long and Evans, and by Pelkan. In animals showing periodic sexual signs and symptoms such as the dog, cat, and pig, this test is not needed, nor is it necessary in the monkey, where menstruation occurs.

Probably the most significant contribution to the complex problem of ovarian endocrinology was made by Allen and Doisy in 1922. They found that an extract of follicular fluid, when injected into a castrated mouse caused changes in the vaginal discharge characteristic of beginning oestrous. Not only did they discover this hormone, but they also developed a simple, specific biological test for it, and, later standardized the potency of the extract in rat units. In 1926, Doisy succeeded in isolating the crystalline form of this hormone and he named it theelin. A few months later, Butenandt, in Germany, working independently, also succeeded in isolating the follicular hormone in the crystalline form.

This oestrous producing hormone has now been found in the urine, blood, milk and feces of pregnant women, in menstrual blood, in the blood of the new-born child, in the blood and urine of males, and in many plants.

The enthusiasm over Allen and Doisy's work caused many workers in this field to forget the importance of the corpus luteum as an internal secretory organ. Some went so far as to claim that the folliculin was the only hormone of the ovary, and Frank suggested that it be called the female sex hormone.

Probably the first to suggest that the corpus luteum elaborates an internal secretion was Gustav Born. He noted that in the first days of pregnancy, a decidual

\*Paper given during Post-Graduate Lecture under auspices of Oklahoma University.



reaction occurs in the stroma cells of the endometrium. As these changes progressed, the corpus luteum, instead of undergoing retrogression, continued to enlarge and reach its peak at the time when the placenta was beginning to form. He suggested that the internal secretion of the corpus luteum prepared the endometrium for the reception of the fertilized ovum. Born died before proving his theory, but the work was continued by L. Fraenkel, who in 1903, proved Born's hypothesis and showed conclusively that pregnancy could not continue in rabbits when the corpus luteum was cauterized or removed within six days after coitus (ovulation).

In 1907, Leo Loeb showed that the corpus luteum sensitized the endometrium so that irritation of any kind will cause decidual changes. In order to cause ovulation and subsequent formation of corpora lutea in guinea pigs, without coexisting pregnancy, he mated the females to vasectomized bucks. Using these females after an unfertilized ovulation, he inserted a foreign body into the uterine cavity on the day when the embryos would have become implanted if the animal had been pregnant. In each instance a tumor of decidual cells formed at the site of the irritation. This result could not be obtained at any other time in the cycle, nor could it be obtained if the corpora lutea were cauterized or removed.

In 1929, Corner proved conclusively the dual secretory function of the ovary and established a test for the corpus luteum hormone. He cauterized the corpora lutea in rabbits, twenty hours after mating, at which time the fertilized ova are in the tubes. No decidual changes occurred in the endometrium and none of the embryos lived after the fifth day. This demonstrated again the dependence of the endometrium on the corpus luteum for production of the progestational changes. Corner then proposed the following test for the presence of the corpus luteum hormone. A doe rabbit is mated and eighteen hours later is subjected to the removal of both ovaries and a small piece of the uterus, to be used for control. Corpus luteum extract is then administered daily for five days and on the sixth day the animal is killed. The embryos are recovered if present and a microscopic section of the uterus is compared with the section removed at castration. With the administration of corpus luteum extract the endometrium

undergoes changes indistinguishable from characteristic progestational changes present on the fifth or sixth day of a normal pregnancy. When this test is repeated using follicular fluid instead of corpus luteum extract, no progestational changes occur.

Hisaw has recently isolated a crystalline and a non-crystalline fraction from an extract of cow corpora lutea. The former fraction causes relaxation of the pelvic ligaments, characteristic of pregnancy, in guinea pigs, and the latter fraction causes characteristic progestational changes in the endometrium.

Certain other facts pertaining to the corpus luteum hormone are of interest. Its inhibitory influences on menstruation and ovulation is shown by the following clinical and experimental observations. In cattle, persistence of corpora lutea prevents ovulation and causes sterility, both of which are corrected when the corpora lutea are destroyed. Experimentally oestrous and ovulation can be prevented by injection of corpus luteum extract. It is evident then that the follicular fluid and the corpus luteum extract have an antagonistic effect, however, when they are given in the proper time relation in promoting normal menstruation and ovulation, their effects are synergistic.

This teamwork between the follicle hormone and the corpus luteum hormone has been demonstrated in numerous ways. Corner and Hartman, working separately, found that in primates, there are two types of menstruation, one in which ovulation does not occur, and one in which ovulation does take place. With the former type of menstruation, there are no premenstrual changes in the endometrium, while in the latter type, where there is a corpus luteum present, typical premenstrual changes occur. The follicular type of cycle is the one present in the lower type of animals like the rat and the possum, while in higher animals such as the monkey, the corpus luteum plays an increasingly important role. In man, the follicle-corpora luteum cycle predominates, but occasionally there is a reversion to the follicular type. This occurs most frequently at the two ends of the menstrual life, namely, puberty and at the climacteric period. Corner and Hartman injected folliculin into castrated monkeys and caused uterine bleeding. On examination of the endometrium of these monkeys, however, they found no premenstrual changes. This

has also been done in women by Werner, with the same findings. Corner then gave a castrated monkey a series of folliculi injections, followed by a series of corpus luteum injections and in this way produced a true menstruation with typical changes in the endometrial glands. Hisaw confirmed these findings and he and Leonard sum up the conclusions thus: "The function of the follicular hormone seems to be that of putting the uterus in the proper physiological condition so that it can respond to the action of the corpus luteum hormone. Neither of these substances can produce progestational proliferation in the castrate uterus when given alone. If, however, the uterus is first brought into the condition typical of oestrous through the injection of follicular hormone and is followed immediately by corpus luteum injections, progestational proliferation results."

The next important advance in sex physiology was the demonstration of the fact that the anterior lobe of the pituitary gland controls ovarian function. Long and Evans had produced luteinized atretic follicles and had delayed oestrous and ovulation by injection of alkaline extract of beef pituitary. Smith and Engle caused true ovulation and luteinization of atretic follicles coupled with growth to a degree of gigantism, by repeated anterior lobe pituitary transplants in immature mice. It was soon discovered that large amounts of anterior lobe pituitary hormone are excreted in the urine of pregnant women. This, as you know, led to the development of the Ascheim-Zondek test for pregnancy.

The conclusions from the study of the anterior lobe of the pituitary are that there are four hormones concerned: (1) prol-an A, which causes follicle ripening, (2) prol-an B, which causes luteinization of the follicles, (3) a growth hormone, (4) a metabolic hormone. We have then in the anterior lobe of this gland, the motivator of the ovary. Prol-an A starts follicle ripening and incites the theca cells to produce folliculin, which in turn induces the growth phase of the endometrium. Prol-an B changes the granulosa cells to lutein cells and incites them to produce progesterin, which in turn causes the premenstrual secretory phase of the endometrium. In the hormone, as obtained from the urine of pregnant women, the prol-an B is predominant.

The importance of the normal thyroid

activity for proper functioning of the sexual glands cannot be over-estimated. Whether the action is a specific one on the ovaries or the pituitary gland, or whether the results are due to a general effect on metabolism, has not been entirely established. Many cases of amenorrhea, menorrhagia, and sterility are largely dependent on hypothyroidism and they are relieved by thyroid administration alone.

Little is known concerning the relation of the mammary glands to ovarian and uterine function, but that there is some definite relation, is evidenced by the increased activity of the breasts during pregnancy and from cases of lactation atrophy of the uterus. Empirically enlarged and painful breasts have been noted with administration of mammary substance, and Cutler has noted that administration of ovarian substance relieves tender breasts at the menstrual time. Experimental work is now in progress which we hope will elucidate this relationship.

In the past five years great strides have been made in the problem of therapy from a theoretical standpoint, application of the knowledge gained in the experimental field to human beings, however, has until recently, met with very little success. Reasons for this disparity of results are manifold. Some of the more important are the following: differences in body weight between experimental animals and human beings, impure products, confusion of indications for treatment, and an absence of criteria for estimating results.

Certain endocrine products have now been refined and give good results often enough to warrant a trial when indicated. Those most helpful in functional uterine bleeding are thyroid, anterior lobe pituitary hormone, lipoid extract of the corpus luteum, and empirically mammary substance.

These cases should be divided for the purpose of treatment into three groups, those at puberty, those during sexual life, and those at the climacteric period.

At puberty the follicular type of menstruation is not uncommon. You probably have all had cases of persistent bleeding in young girls. The reason for this type of menses is evident when we remember that the ovaries are filled with developing follicles and before the first menses there is no corpus luteum present. Even after the child has had several periods, there may still be an excessive amount of follicular



fluid present in comparison to the amount of corpus luteum hormone. The child may have normal menses and suddenly have a profuse prolonged period, due to a temporary reversion to the follicular type of cycle, in which ovulation has not occurred and hence the inhibiting effect of the corpus luteum is absent. Sporadic incidences of this type may occur at any time in the sexual life of a woman, but they are most common at the two ends of the sexual life, namely puberty and the climacteric.

The treatment is clear when the etiology is understood. The inhibiting effect of the corpus luteum is absent hence corpus luteum must be supplied. This may be accomplished in two ways. First, we can cause the formation of corpora lutea in the patient's ovaries by injection of the anterior luteinizing hormone, or second, we can supply the lipoid extract of the corpus luteum. In either case, the patient is supplied until conditions are favorable for the establishment of the normal mechanism of ovulation and corpus luteum formation. Lipo-lutein should be tried first and if the case does not respond, the anterior luteinizing hormone may be tried. Theoretically, this order of procedure should be reversed, but I recommend this order of trial for the following reasons. First, antuitrin S is expensive, second, its administration is painful to the patient, and lastly, there is danger of luteinizing all of the follicles in young women by large doses or long continued treatment. As you know, the lipo-lutein acts on the uterus only, while the antuitrin S procures its effect on the endometrium indirectly through its action on the ovary. Near the menopause, where persistent follicles are forming without rupturing, corpus luteum should be tried. If not successful, it is sometimes advisable to stop follicle formation by radiation of the ovaries or the pituitary gland, but this angle of the subject will not be discussed in this talk, as it is a whole subject in itself. Suffice to say that in young women, who do not respond to endocrine therapy, plus dilatation and curettage, small doses of radium may be tried. In women in the menopause, radium is usually the method of choice.

The question of curettage is one which must be decided in each case. Its purpose is to remove the hyperplastic endometrium, which is almost invariably found in cases of this type, so that a normal one may reform under the influence of endocrine therapy. In cases near the menopause it

should always be done, because of the added necessity of eliminating carcinoma of the fundus. In younger women, when the clinical response to endocrine therapy is prompt, curettage is not necessary.

A basal metabolism test is very important and variations from normal should be corrected by proper medication. Thyroid administration alone sometimes brings about the normal sexual mechanism.

I felt that a brief summary of the history, treatment, and course of several cases, representing the different types of symptoms referable to endocrine disorders, would be more helpful than the mere recitation of groups of typical symptoms.

The first group of cases presents different types of menstrual disturbances. The first two cases show the follicular type of cycle in which there is profuse bleeding at the time of menstruation. No ovulation takes place and hence no corpus luteum is formed. The endometrium in these cases shows a hyperplasia and is entirely devoid of the usual premenstrual changes which occur when a corpus luteum is present.

The first case is given in detail, because she was in the hospital under careful observation and also because she was cured when the correct treatment was given, while she failed to stop flowing on the usual measures.

M. K. Children's Hospital. A-1186. Age 14. May 1, 1931.

**Past History**—Patient has had a rheumatic heart disease since 1925, with occasional periods of decompensation. Has had to be in hospital for long periods of time because of heart condition.

**Present Illness**—Patient began to menstruate for first time three weeks ago, and is still flowing. For the past week flow has been so profuse that pads had to be changed every ten minutes.

**Physical Examination**—Uterus forward—not enlarged or tender. Adnexae—left ovary slightly enlarged, probably due to small, unruptured follicle.

**Laboratory**—Wassermann, negative. Clotting time, 2 3-4 minutes. Bleeding time, 12 minutes. R. B. C., 4,220,000. W. B. C., 12,500 (concentration).

**Heart**—No signs of failure present.

May 1, 1931—Note (R.J.C.) If cardiac condition is not causing the bleeding and the clotting time is normal, the bleeding is evidently of the follicular type which is common in the monkey and is frequently seen at puberty and climacteric, or the two ends of the menstrual life. Advice—lipo-lutein amp., one daily as necessary to control bleeding. Check basal later.

May 2, 1931—Lipo-lutein amp. 1.

May 6, 1931—Still bleeding a little, but much

improved. Bleeding begins to decrease in two hours after injection, then stops completely for five hours, then gradually recurs.

May 7, 1931—(R.J.C.) Advice. Corpus luteum emplets gr. V, b.i.d. Use lipo-lutein only if corpus luteum does not control flow.

May 8, 1931—Bleeding much less.

May 13, 1931—Bleeding stopped entirely.

May 19, 1931—Discharged.

**Interim History**—No menstrual period in June—discontinue corpus luteum emplets.

Re-entry—(No June period). Service changed.

August 4, 1931—Second period started July 18. Has been bleeding ever since. The first week, the flow only moderate, but since then large amounts of blood have been lost, large clots are passed and "dozens" of pads are used daily.

Laboratory—R.B.C., 2,960,000. W.B.C., 11,800. C.T., 1 minute. B.T., 7½ minutes.

August 4, 1931—Patient given 300 c.c. of citrated blood.

August 5, 1931—Lipo-lutein 1 amp.

August 6, 1931—Transfusion 400 c.c. Basal plus 7, (Lipo-lutein 1 amp.). Consider retention cyst, thyroid disturbances possibly associated with heart lesion.

**Diagnosis**—(1) Hyperthyroidism. (2) Follicle ret. cyst. (3) Constitutional.

**Advice**—(1) Rest in bed. (2) Ice cap to lower abdomen. (3) Sistomensin gr. ½ tablet ii, t.i.d. (4) Parathyroid gr. 1-10 b.i.d. (5) Calcium lactate gr. V or X, t.i.d.

August 7, 1931—Lipo-lutein amp. 1.

August 8, 1931—Lipo-lutein amp. 1.

August 10, 1931—Has bled very little since the seventh. Lipo-lutein discontinued.

August 13, 1931—Still bleeding.

August 15, 1931—Transfusion 350 c.c. Still bleeding—much less.

August 18, 1931—Patient getting only sistomensin—should have calcium and parathormone—bleeding almost stopped.

August 19, 1931—Transfusion.

August 20, 1931—No more bleeding.

Patient discharged to O.P.D., where I followed her. She was placed on corpus luteum gr. V, b.i.d., and her subsequent periods in September, October and November were normal, so the corpus luteum was discontinued. She has evidently established her regular follicular corpus luteum cycle.

The next case was one in which the same type of cycle was present and in which curettement was done, followed by corpus luteum.

V. W. Age 12. Past history negative. Always well. First seen October 27, 1931.

**Menstrual History**—First period began July 9, 1931. Had a normal period. The second period was in August and was normal. Third period in September normal.

**Present Illness**—Eighteen days after the Sep-

tember period, she began to menstruate again, and has been flowing off and on until the present time, or almost a month. She received various types of medication, including thromboplastin, pituitrin and two ampoules of lipo-lutein by her family physician. Because of the continued loss of blood, it was felt best to stop the bleeding promptly by curettement and then give corpus luteum to prevent its recurrence. This was done and she has had normal periods since. (Pelvis, negative).

The next case represents one in which menstrual irregularity was due to thyroid deficiency.

Age 14. January 6, 1932. Past history negative.

**Menses**—Began at 11 (usually they begin late), but have always been irregular, 21 to 28 days, last five days profuse. Pain first two days. Only other symptoms were lassitude and constipation.

**General Examination**—No positive findings.

**Pelvis**—Uterus two degrees retrodisplaced. Otherwise negative.

**Basal Metabolism Test**—Minus 18. Started on thyroid gr. B.I.D., January 9, 1932.

Period on January 18th to 22nd. Moderate flow. No pain. Feels better, not so sleepy. Bowels regular.

February period—16th to 20th. Moderate flow. No pain. Still feeling fine.

**Basal**—Plus 2. Periods have been normal since.

The next case is one of primary sterility.

Mrs. C. W. Age 21. Married five years.

**Past History**—For the past five years, patient's periods have been very irregular. She would skip three or four months and then flow for three to six weeks. She had two curettements for prolonged bleeding with no permanent relief. The last curettement had been five months before, the bleeding stopped for two weeks but she has been flowing off and on most of the time since. Ever since marriage she has been anxious for children, but she had never succeeded in becoming pregnant. The case was evidently an endocrine problem. A basal was done and was minus 11. X-ray of the sella tursica and the sugar tolerance test were negative. The first problem was to get the bleeding stopped, the sterility being of secondary importance.

The patient was started on thyroid gr. 1, twice daily for ten days, then once daily. The bleeding stopped for two weeks, then started again. Lipo-lutein and calcium were tried, because it was felt that one grain was an adequate dose of thyroid, however, after a month with some bleeding off and on, I decided to work the thyroid dose up to tolerance and she finally received 2½ gr. a day.

The patient had normal periods in December, January and February, for the first time in six years.

The tubes were then tested and found open, so the patient was told that when the thyroid medication began to have its full effect, pregnancy would probably occur. Her last period was June 25th, and she delivered the following April.



Periods are normal since pregnancy, but patient is still on thyroid.

Under the second topic of intractable discharge, I have included, trichomonas vaginitis, gonorrheal vaginitis in children, and obstinate cases of cervicitis in young women.

The first type is vaginitis in which the trichomonas vaginitis is found in large numbers. There is considerable discussion in the literature as to whether this organism itself or the accompanying bacteria cause the discharge. I shall not attempt to discuss this angle of the problem, as the important fact is, that, the finding of larger numbers of trichomonads in a saline drop preparation of the vaginal secretions, gives us a method of classifying this type of case and indicates the course of treatment needed.

In general, patients with this disease give a history of having an irritating, profuse, persistent discharge, which has not responded to the usual douches and local treatments. They have usually been to several doctors and have tried many types of treatment. Such a history should make one think of trichomonas infection. The examination reveals a frothy, watery, greenish-yellow discharge in the vagina and in marked cases over the vulva. Speculum examination reveals small hemorrhagic spots on the cervix and vaginal walls. In severe cases, there is excoriation about the external genitalia and the inner aspects of the thighs.

A diagnosis is easily made by microscopic examination of a saline drop preparation of the vaginal secretion. The trichomonas is an ameboid-like organism, a little larger than a pus cell and a little smaller than an epithelial cell. They can usually be found under the low power by watching the field for movement. They are very motile in a fresh preparation. After the organism is located a high power examination clinches the diagnosis. In typical cases there are many organisms. Occasionally I have found one or two trichomonads in examining a discharge that had none of the gross characteristics of a trichomonas infection. In a case of this type the trichomonas is probably not the cause of the discharge.

After the diagnosis is made, the question of treatment arises. The reports of various men, working on this problem, show that green soap, glycerine, weak carbolic and methylene blue destroy these

organisms very rapidly. The treatment that I have found very effective in most cases is the following:

The speculum is introduced into the vagina and the vagina is scrubbed thoroughly with a piece of cotton soaked in a 50 per cent solution of green soap. This is repeated once or twice shifting the speculum so that all portions of the vagina are reached. The soap is then removed and a solution containing glycerine, mercurochrome and iodine, is used in the same way. These treatments are given three to six times a week, depending upon the severity of the case. The home treatment consists of having the patient take a douche of one-half teaspoonful of lysol to two quarts of water once daily. After two or three weeks of treatment, a rest period is allowed but douches are continued. The patient is then told to return just after the next period and to take no douches for forty-eight hours prior to her return. The secretion is examined again at her next visit and if the trichomonads are present, the course of treatment is repeated.

Concerning the results, there are many favorable reports in the literature. In eighty-three cases, which I have treated in the last three years, only two have failed to clear up completely. One case cleared up for two to three months and then had a remission which cleared up promptly with further treatment. This patient lived out of the city, which made adequate treatment difficult.

A brief review of one of these cases will help fix this type of case in your mind.

The patient was a physician's wife, 37 years of age. She had five pregnancies. There were four children living and well, and one child was still-born. The oldest child was ten and the youngest three years of age. Her chief complaint was a profuse vaginal discharge, which had started suddenly in October, 1927, and had persisted in spite of treatment consisting of douches, conical excision, curettage and excision of Skeene's glands. In March, 1930, the patient was referred to me. A saline drop prepared showed many trochamonads. As the patient lived some distance from the city, I outlined treatment to be carried out by her physician. Two months later she came for examination. She stated that shortly after the treatment was started, the discharge stopped. This was the first time in three years that she had been free

from discharge. On questioning her, it was found that there was still some discharge for a few days after the period and continuing for two weeks. A letter from her husband four months later stated that the condition had entirely cleared up.

During the past six months, I have been using an amoebocide, put up in suppository form for me by Eli Lilly Company, called carbosone. It is ideal for treating virgins and is effective in the cases which do not clear up promptly with the above outlined treatment. Although the suppositories are expensive, this method of treatment has three distinct advantages. First, it is more or less specific, second, it does not require office treatment, and third, the medication is in contact with the vagina over a longer period of time.

The suppository is placed in the vagina at bed time and usually the medication remains in the vagina all night. I give a course of twelve, beginning with the period, extending through the period, and for a few days afterwards. This is the best time to kill the trichomonads.

The second type of vaginitis I wish to discuss is gonorrheal vaginitis in children. Anyone who has treated a large number of these cases, knows how difficult they are to cure, even under the most advantageous conditions. The most favorable reports in the literature, in a series where douches or injections were used, the treatments extended over months before a cure was effected. Bernard Notes, of the Children's Hospital, Washington, D. C., in 122 cases found 70 per cent gonorrheal and 30 per cent non-specific. His treatment consisted of one per cent sodium bicarbonate and one per cent cresol irrigations twice daily, with protein silver antiseptic in the acute stage. The average duration of the treatment necessary for cure in the gonorrheal cases was ten months. For non-specific cases, four months was the average. He emphasized the importance of treating the cervix if it is involved.

Schauffler, in the American Journal of Children's Diseases, advocates treating the patient with a mixture of anhydrous wool fat and silver nitrate and mercurochrome. He distends the vagina with this mixture using a special syringe in order to get the necessary pressure. His treatments are given every two days for a week and then two to three times a week for three months. My reason for quoting these statistics is to point out the difficulty one has in curing these cases.

Three years ago, in the clinic at St. Luke's Hospital, we had several girls, who had been taking treatment for months with only slight improvement of the condition. Since the other forms of treatment had not been successful, I decided to try diathermy. Cumberbatch, in his book on diathermy, reported good results in this type of case. In giving diathermy to a child, it is necessary to take great pains not to get the child frightened and if this cannot be done, the treatments are almost impossible. Miss Reilly, head of the diathermy department at St. Luke's co-operated with me in the treatment of these cases, and it was largely due to her patient care that we were able to give the children the adequate treatment.

A Corbus electrode was used for the active electrode. This was fitted with rubber tubing so the exposed area could be adjusted to the depth of the vagina. A small plate was used for the inactive electrode. The temperature was raised to 112 degrees Fahrenheit, and held there ten to twenty minutes.

During that year I had five clinic cases and two cases in private practice of gonorrheal vaginitis. All the cases cleared up so that three successive smears at two week intervals were negative and the discharge had disappeared. The longest treatment period was five weeks and in this case the smears were negative in three weeks.

A brief summary of this case is as follows: Patient, age two years, began having discharge a week before. Her seven year old brother and three year old cousin had had discharges for four weeks. The cases were diagnosed as gonorrhea at the City Hospital. They were referred to us for treatment. Examination showed profuse purulent discharge all over the vulva. Smear diagnosed by Dr. Walsh, the pathologist, as gonococci. No growth on ordinary culture, as was to be expected. The patient had eleven treatments between June 11 and ending July 19 (five weeks). The mother thought the child was cured after the third treatment because of the marked improvement of the discharge. The smears became negative after nine treatments or after three weeks. The additional treatments were given so as to be sure that the infection had stopped.

Non-specific vaginitis in children also responds very well to diathermy and requires, as a rule, much less treatment. Just recently the smears on eleven cases treat-



ed over a year ago, were checked and were all still negative.

Now just a word about endocervicitis before closing. Most of the cases of cervical laceration with erosin and eversion, occurring after delivery, are readily cured with the usual treatment, plus striping with the cautery. A few, however, persist in spite of treatment, and, it is these cases, especially the ones occurring in women together with the cases of chronic cervicitis due to gonorrhea, that are very resistant to the usual treatment.

The persistence of the trouble is readily understood when viewing it from a pathological standpoint. With infection or eversion, the squamous epithelium is cast off along the exposed area. When this happens, the columnar epithelium of the cervical canal extends down to cover the raw area and at the same time sends race-mose extensions into the underlying muscle to form new cervical glands. This is the beginning of the process termed erosion. The delicate mucous membrane being exposed to the vaginal secretion, is in turn cast off and the surface is again covered with squamous epithelium. The ducts of the glands are now covered by squamous epithelium and have no exit for their secretion. They gradually enlarge and eventually rupture through the squamous epithelium. The battle between cervical canal epithelium and squamous epithelium is again begun.

This so-called war persists until the glands are removed. In older women this is accomplished by conical excision, but in younger women, one hesitates to do this procedure, because of the possibility of extensive formation of scar tissue. In these younger women conization with the cutting current is the method of choice. This method may be carried out in the office under topical anesthesia of two per cent nupercaine. It removes the glands and tissue and the excised tissue may be used as a biopsy specimen. There is a very thin layer of coagulum, which separates in about a week and the cervix is practically normal in a month.

This is not coagulation and in my experience, is distinctly superior to it, for the following reasons: first, no large infected sloughing tissue is left behind; second, healing takes place in two to four weeks, instead of from six to eight weeks. I have seen several cases of serious pelvic infection, lasting several months following

coagulation. Finally, from a surgical standpoint, it is much better to do a clean excision of tissue with a minimum of slough, than to cook the tissue and leave a large mass of infected tissue to slough out.

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#### ACUTE SILICOSIS

Earle M. Chapman, Boston (Journal A. M. A., April 23, 1932), reports three cases of silicosis in which respiratory symptoms appeared after eight, twenty-one and twenty-nine months of exposure to an alkaline dust of high silica content. The severity of the respiratory embarrassment is attested by the marked decrease in the vital capacity, which was lower in one case than that usually seen in uncomplicated cardiac failure. Right ventricular hypertrophy, described in the pathologic examinations, is probably explained by the increased resistance and loss of elasticity in the pulmonary vascular bed. This finding aided in the recognition of the disease in the living patient, in whom the diagnosis could not be made by the roentgenogram alone. No determination was made of the silica content of the dust or soap to which these men were exposed, but estimates of the silica content of the tissues in one case, done by the method of King, suggest that the reaction in the lungs is not a direct, quantitative one and very likely the rapid development of fibrosis results from the accelerated formation of a silica hydrosol in the presence of the alkaline soap dust. Ordinarily this reaction progresses slowly in the faintly alkaline tissue fluids and may be so prolonged that symptoms do not appear until years after one has left hazardous industry.

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#### GASTRO-ENTEROLOGY AND PROCTOLOGY ASCARIASIS: SOME SURGICAL AND ROENTGENOLOGIC ASPECTS

Charles Bruce Morton and Vincent W. Archer, University, Va. (Journal A. M. A., Feb. 6, 1932), studied the histories of 110 patients with ascariasis, and in 41 individuals surgical consideration had been warranted. In five of them symptoms of cholecystitis had been simulated, and in twenty-four appendicitis or intestinal obstruction had been suspected. Eight patients had undergone operation, and in all instances ascarids were apparently responsible for the symptoms. It is suggested that ascariasis be considered in the differential diagnosis of atypical abdominal symptoms. A simple technic for the roentgenologic depiction of ascarids in the gastro-intestinal tract is described briefly. The patient is not allowed any food after midnight preceding the day of the examination. The usual barium contrast meal is administered to the patient, and films of the gastro-intestinal tract are exposed at intervals of one, two and four hours after the ingestion of the meal. The parasites appear at first as cylindrical filling defects, from 5 to 8 mm. in diameter and up to 15 or 20 cm. in length, in the lumen of the small intestine, usually the jejunal portion. The later films will show stringlike shadows in the central portion of the filling defects, interpreted as barium filling the enteric canal of the parasites. This technic for the roentgenologic depiction of ascarids in the gastro-intestinal tract is recommended for use in addition to the usual examinations of the stools.

## PUBLIC HEALTH AND TAXATION\*

CHAS. M. PEARSE, M.D.  
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Pittsburg County  
McALESTER

Public Health and Taxation is the subject I am going to bring to you today—but it really should read “taxation and public health,” for taxes is the outstanding word in every gathering at present. It has furnished more planks for political platforms than its much used running mate “prohibition,” and no doubt it dates back to the time of Noah.

It is my purpose here to show you, not how much, but how very little of our taxes is spent on public health work. For example—the Chamber of Commerce of McAlester, has gotten out an itemized statement showing the average cost to each taxpayer of Pittsburg county for each \$100.00 of taxable value.

This statement shows that the public health and tuberculosis fund only cost .04 for every 100.00, The hospitalization fund cost .01. This hospitalization fund is a fund resulting from a bill legislated for Pittsburg county, by which the adults of this county shall receive treatment and hospitalization. This fund is under the supervision of the Director of Public Health, and every case is thoroughly investigated before being admitted to a hospital. The physicians of Pittsburg county may admit indigent patients by referring them to the Director of Public Health. This bill has proven to be a boon to Pittsburg county's poor who are unable to get hospitalization in any other way.

Crippled Children Fund, cost .01—making a total of only .06 for every \$100.00 value. Just to give a few items for comparison. I will cite the drag fund estimate which amounts to .07 on every \$100.00, and the highway fund which is .16. Now please understand that I am an advocate of good roads, and believe they should be kept up out of the taxes, but I also advocate keeping our citizens in good health to enjoy the use of good roads.

When you stop to consider the returns you get on your money the health work shows a higher percentage than any other item of taxation, for it is a continuous year of work, while some items last only a few days, as free fairs, and others

a few months, as road work, district courts, etc.

The public health funds should come from taxes for it is the one simple way for the man who is able to pay taxes to help his tenant or neighbor who is not able to pay taxes, or who owns no taxable property. This citation is for Pittsburg county, and your county may vary according to its population and valuation, but this gives you a fair estimate of the cost of public health work.

I believe this is a very fitting time to bring to you men who are practicing medicine that public health work is not a step toward state medicine, as is thought by some physicians, but it works hand in hand with you in stamping out epidemics, reaching remote and isolated communities, and in taking care of so many indigent patients that would only prove a loss of time to the busy physician.

Now in conclusion I want to again call your attention to the “value received” you get for every cent of taxes spent in public health. If just one crippled child was restored to health it would be worth every cent of taxes paid, but stop and think how many little bodies are made whole and happy every year, how many epidemics of diphtheria, typhoid fever and smallpox are prevented and all of this is accomplished by such a small amount of taxation. Every taxpayer should be proud to know that he is allowed to have a part in such a humanitarian work.

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## MENTAL DERANGEMENTS IN HYPOTHYROIDISM

Emeline P. Howard and Andrew H. Woods, Iowa City (Journal A. M. A., July 18, 1931), assert that insufficiency of thyroid secretion sometimes shows its most striking effects through malfunctioning of the brain cells. The patient may become depressed and apprehensive, thought may become slow and bodily movements retarded. The condition is easily mistaken for a depressed psychosis. Or there may be irritability and excitement leading to the diagnosis of mania. Patients may show thought distortion with hallucinations and delusions, which may become so bizarre as to be interpreted as signs of dementia praecox. In these psychotic cases, even though the physical signs of myxedema are present, those signs are easily overlooked. This is partly because some physicians at once relegate patients who show mental derangement into a nimbus of mystery and infer that somatic disease cannot be expressed in mental symptomatology. A more excusable cause for overlooking evidence of physical disease is that the patient's mental attitude sometimes makes physical examination difficult or impossible.

\*Read before Southern Oklahoma Medical Association, Durant, Oklahoma, June 23, 1932.



# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan, Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

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### EDITORIAL

#### THE COST OF MEDICAL CARE

We have received what we hope will be the final blast upon the complicated problem which no doubt emanates from Dr. Ray Lyman Wilbur.

We cannot and do not feel like changing our position taken sometime ago. These reports have been made up by people who are either connected with hospitals or hold various positions. Now it is generally known that Dr. Wilbur is not a practical practitioner of medicine but in addition to his political activities, as a part of Mr. Hoover's Cabinet, he was formerly, a job to which he is now returning, President of Leland-Stanford University School of

Medicine, this school being located in a small city of California, Dr. Wilbur maintaining a San Francisco office. We do not believe that these men connected with schools and hospitals can possibly be in position to appreciate the problems confronting the general practitioner. We do not believe that the organization of groups to practice medicine can be made to work out successfully, as a rule. We do not believe that the personal relationship existing between physician and patient can be destroyed. Then too, one must not overlook the practical aspects, in fact it is utterly impossible to organize "groups" in many places. On the contrary we believe every physician should continue to do all the work he can, with all his energy and intelligence, serve his patient, as a personal problem and in a sympathetic manner, and not handle them as numbers or letters of the alphabet. Of course it would be a fine thing to take, say a small town, containing five physicians, have them all practice medicine but have each one of them take up in addition special study along some special line in order that the entire mass together could render best service obtainable in that community, but men, knowing doctors as we think we know them in Oklahoma, will realize the utter futility of that attempt in many localities. We would like to see the utter abolition of personal animosities and prejudices existing between physicians, but we know too the practical impossibility of that millenium being brought about.

We believe that the people will be best served, in so far as the smaller and isolated communities of Oklahoma are to be concerned, by every physician, closely studying his problems, fitting himself to either perform the work himself or to be able to realize that the case in hand is one which should be referred to someone doing the special work required in that particular case.

This report notes with considerable gusto that in Los Angeles medical service, which would ordinarily cost approximately \$500,000, was rendered by an organized "group" or on the group payment plan, for \$216,410. Now all we can see in this is that somebody gave away valuable services for nothing. As we have said before, the individual physician may be relied upon and will be found today, rendering needy service to those unable to pay, but to deliberately go out and organize a "group" to render the same service to

people, irrespective of their ability to pay, will, in our opinion, render an injustice to the medical profession as a whole.

They will render service for a nominal fee to people who are thoroughly able to pay a fee in keeping with the service they receive. We still think that much of medicine relies upon the clinical application of horse sense on the part of the physician, if the patient is to receive the services he should receive.

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### ALLEGED MALPRACTICE—WATCH YOUR STEP

Recently Oklahoma physicians, and probably the same advice went to those in other states, were advised that there would be an increase in premiums on policies protective against alleged malpractice, the rate now being \$45.00, for a ten thousand dollar policy. It is said that the agents advised those concerned that the raise was due to increase in the number of suits brought in the state. It is significant to note that only a few years ago the rate was \$15.00 to \$18.00, then it was raised to \$25.00, now, due to the depression, no doubt, it has reached the present rather high charge.

In this connection we wish to doubt that there has been any material increase in number of such suits brought in Oklahoma, but we do want to call attention to a certain class of such cases, which should be, in the main, avoidable. Reading the petitions filed in these suits brings one to the positive conclusion that often the suit was a useless and unnecessary one to begin with. You cannot get blood out of a turnip, and especially, at this time of depression physicians should be unusually wary of bringing suits to collect fees, where, in many instances, a moment's reflection would show that all the physician would have, if he won his suit, would be a worthless, uncollectable judgment. Thousands of people, good yesterday, are "bomb-proof," today against any sort of judgment, so, the physician should use a great deal of discretion, and know his judgment would be worth something, if he secured it. In some of these suits the defendant promptly counterclaims with allegations of malpractice. Whether such allegations are groundless or not the attorneys promptly take the view that he has a harder case to combat, and at once demands a larger fee, rather than his usual commission, from the physician who has placed himself in an

embarrassing position. As a matter of fact it is well known that if the attorney goes ahead with his original intention to sue and get judgment upon a physician's bill, all allegations of malpractice are nullified, if the attorney gets judgment for the physician, despite the lugged in, twelfth hour allegation that the physician was guilty of malpractice. With this in mind it might be well for the physician to have an understanding in advance with his attorney that he is employing him to sue and get a judgment for services properly rendered, and that his fee will be based upon the amount of judgment he recovers rather than upon, bizzare allegations in reply to the suit, as originally brought.

It should be remembered too that very few men can pay any sort of judgment regardless of their former prosperous condition. It seems it would be much better for the physician to personally and tactfully talk it over with his former patient, take his note and allow the matter to assume virtually a "moratorium," rather than go to the expense and waste of time incident to such suits. As a rule, in the end nothing is recovered, the physician finally awakening to the fact that he has merely sent good money after bad, in addition to lost time and aggravation.

We would advise that suits only be brought when the claim is clearly just and the defendant vulnerable. Finally, in such cases friends are retained, not lost, if the case can be amicably settled between the parties most at interest—the patient and the physician—rather than have the matter go to a court of adjudication.

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### LEGALIZED "PUGS"

Recently, in Madison Square Garden, Ernie Schaaf, a popular prizefighter, admired and liked by the "sports" and that class of strangely mentally misdeveloped human beings who, never attend their bar or medical association meetings, but invariably make it a point to attend every affair where pugilistic pugs, usually utterly worthless to our citizenship for anything else, meet, and under legal sanction, pummel each other around the ring until a decision is reached, entered the ring against a huge low-browed, alleged scientific fistic fighter, Primo Canera, by name, evidently an overfed pituiaristic freak, who outweighed him by approximately 30 pounds. Result of the fight—a blow on the head, unconsciousness, and



death, after three or four days of coma, despite a brain operation, which it was hoped would relieve possible pressure from the presence of a clot. Postmortem examination disclosed only a small clot, but what is more significant, positive evidence of a previously existing, mild encephalitis, of a chronic type, no doubt the result of previous ring affrays. This finding lifted Carnera out of the shadow of probable criminal charges and relieved what little mentality he had to relieve.

Prize-fighting is not necessarily a particular problem of the physician, nor is it necessarily a function of the medical profession to protest against this useless, time-wasting and mentally degrading form of so-called "sportmanship." However it is, or should be the object of every good citizen, whether physician or not, to use his influence to put an end to the several thousand alleged meets at which this class of useless brutes pound one another around the ring. There is nothing exalting, helpful or uplifting to anyone attending these legalized violations of the spirit of the law. American (U. S.) citizens, as a rule will be found strenuously objecting, often extremely nauseated at the sight of a bull-fight or cock-fighting meet, yet many of them are attracted to a prize-ring; this on the theory that the men are evenly matched in weight and skill. This is wrong in principle. Probably the cleanest American sport is baseball, with wrestling a close second, but the latter often is accompanied by very cruel, and sometimes months or permanent injury following.

We have our hands full even partially attending to our own business, nevertheless physicians should consider the uselessness and degrading influences of the prize fight, if only on the grounds it sometimes ends in fatalities or permanent mental and physical cripplement. We have endorsed and fostered for years, protection of laboring men from mechanical injury by the installation of protective devices. It would seem just as logical to protect these semi human animals from injuring themselves, instead of legalizing their bouts. A spade, a hoe, a ditch-digging machine or other useful labor producing instruments in their hands would make them somewhat worthwhile as citizens; as it is they are "between bouts", merely bums, hanging around the most debasing centers, awaiting an easy "set-up" by which they and their manager may

secure money enough for a few weeks or months of further degradation by supporting speakeasies and all their attendant vices. As a rule none of them ever retain their quickly gotten gains or amount to anything in any respect as citizens helping make the country better and more worthwhile.

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### *Editorial Notes—Personal and General*

DR. G. C. CROSTON, Sapulpa, who had a severe attack of appendicitis, is slowly improving.

DR. C. O. EPLEY, Oklahoma City, announces removal of his offices from 717 North Robinson to 418 Osler Building.

DR. HERMAN FAGAN, Oklahoma City, announces his removal from the Medical Arts Building to 400 West Tenth Street.

DR. C. S. NEER, Vinita, narrowly escaped death when the rear of his car was hit by a Katy passenger train, throwing it into a ditch. Dr. Neer was scratched but not seriously injured.

WESTERN OKLAHOMA MEDICAL SOCIETY met March 21, at Clinton, and gave the following program:

Dr. Fowler Border, Mangum, "Humorous Paper."

Dr. L. J. Moorman, Oklahoma City, "Some Diagnostic and Therapeutic Pulmonary Problems."

Dr. Henry H. Turner, Oklahoma City, "The Anterior-Pituitary Sex and Growth Hormones."

Dr. V. C. Tisdal, Elk City, "Retro-Displaced Uterus."

Dr. Coyne H. Campbell, Oklahoma City, "Etiology and Diagnosis of Pellagra."

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### DOCTOR ROBERT HENRY HARPER

Dr. R. H. Harper, 64 year old pioneer physician and surgeon of Afton, died February 22, following an illness of several months.

Dr. Harper was born February 11, 1869, at Beverly, West Virginia. He graduated from Missouri Medical College in 1895 and began the practice of medicine in 1895, and was married in 1896 to Miss Katherine E. Oldham. In 1897 they moved to Afton, Indian Territory, where he remained until his death.

Dr. Harper is survived by his wife, his mother, two sisters and three brothers.

### DOCTOR GEORGE F. WOODRING

Dr. George F. Woodring, Bartlesville, died February 24, 1933, of pneumonia.

He was born November 15, 1856, in Pulas-ki, Tennessee. He graduated in medicine from the Hospital College of Medicine, Louisville, Kentucky, in 1876. He practiced in Bunker Hill, Tennessee, for two years and then removed to Elk City, Kansas, where he remained until 1889, when he located in Bartlesville, Indian Territory, where he remained until his death.

Dr. Woodring was a charter member of the First Christian Church and the Washington County Medical Society, also the latter's first president. He was a member of the Eagles Lodge and of various Masonic bodies, both York and Scottish Rites.

He is survived by his wife.

### DOCTOR BRUCE WEBSTER BAKER

Dr. B. W. Baker, 44 year old physician of Cordell, died February 14, following an illness of several weeks.

Dr. Baker was born at Pekin, Indiana, February 2, 1889, and had lived in Washita County since 1915, and in Cordell since 1922.

He was a member of the Washita County Medical Society, past president of the Cordell Rotary Club, a Mason and an Odd Fellow.

He is survived by his wife and two daughters.

### DOCTOR JOHN EDWIN MAHONEY

Dr. J. E. Mahoney, 53 year old pioneer physician of Enid died February 8, following a stroke of paralysis.

Dr. Mahoney was born in Waverly, Pennsylvania, January 23, 1880. In 1906 he was graduated from Jefferson Medical College, Philadelphia. He has been a resident of Enid since 1909.

He is survived by his widow and one son.

### FALSE RUMORS CONCERNING VIOSTEROL DENIED BY DR. STEENBOCK

#### A STATEMENT BY MEAD JOHNSON AND COMPANY

Ever since viosterol was offered to the medical profession about four years ago, it has been attacked by various persons. Some of these attacks no doubt were sincerely motivated, but others were seized upon and exaggerated by interests who had no viosterol to sell.

Recently a new form of anti-viosterol propa-

ganda has been reported by physicians all over the country. It is circulated by word of mouth—never in writing—and the apparent purpose is to influence physicians to prescribe vitamin D agencies other than viosterol.

Physicians are being told, for example, that Dr. Harry Steenbock has "condemned" viosterol, that the Wisconsin Alumni Research Foundation "would withdraw viosterol from the market in ninety days," etc., etc.

In answer to these malicious untruths, Dr. Harry Steenbock makes the following statement:

"Viosterol in its various forms has to date been found fully as valuable in medical practice as was anticipated at the time that it was first introduced to the American markets. Up to the present time there have been no reports of any untoward effects from its administration, although originally it was anticipated from the results of animal experiments that some cases of intoxication might result from its use in human medicine. I see no necessity for reversing my original opinion as to its outstanding merits in any way whatsoever. Any statement to the contrary can be definitely labeled as false."

(Signed) H. STEENBOCK.

Physicians can draw their own conclusions and form their own opinions of any house that resorts to sharp practices by allowing its representatives to spread unfounded whispering campaigns against a valuable therapeutic agent that has endured four years of the most searching experimental investigation and clinical use not only in rickets but also for controlling calcium-phosphorus metabolism generally.

### RENAL CARBUNCLE IN INFANCY

Meredith F. Campbell, New York (Journal A. M. A., May 14, 1932), defines renal carbuncle, so called because of its anatomic semblance to carbuncle elsewhere, as a localized massive suppuration within the kidney due to bacterial metastasis (usually staphylococcus), which often produces marked toxemia, is rarely uncomplicated, is difficult to diagnose and unrecognized or inadequately treated, entails a high mortality. Discussion of the lesion is found more often in surgical textbooks than in the literature; less than fifty cases have been reported. The author has been unable to find a record of its occurrence in infancy. The two cases that he reports, a boy and girl each admitted to the hospital at the age of 8 weeks with renal carbuncle and perirenal abscess and subsequently operated on, are unique because of the tender age of the patients. However, they are described more especially because they forcibly demonstrate by specific example an insufficiently recognized principle of medical practice, namely, that infants and children are subject to practically every form of urologic disease which one is accustomed to associate with adult life, and, when clinical manifestations indicate a thorough urologic examination or radical urosurgical treatment, extreme youth is no contra-indication. Nor does the clinical picture differ vastly in juveniles and adults.



# CONDENSED PROGRAM

## FORTY-FIRST ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY,

MAY 15, 16, 17, 1933

*Meeting Place*—All meetings will be held in the Skirvin Hotel. Telephones, local (Oklahoma City) 2-1251, long distance 122.

*Registration*—Top Floor, Skirvin Hotel. All physicians, except those from outside the State and visiting guests, must hold memberships for the year 1933, before registering. Please attend to this if you are not in good standing, by seeing your County Secretary at once.

*Woman's Auxiliary*—Will register on the Mezzanine floor, Hotel Skirvin. Monday, May 15, meeting of Executive Committee (complete program in May Journal).

*Medical Reserve Corps Dinner*—Mezzanine floor, 6:00 P. M., Tuesday, May 16.

*Sections*—See back end of your Journal for information as to various Sections and their Officers.

*Oklahoma Pediatric Society*—Announces that it will hold a meeting on Monday, May 15th. This in no way conflicts with the Sections on Obstetrics, Pediatrics, Urology, Syphilology and Dermatology, which will meet on the afternoons of May 16th and 17th.

*Guests of Honor*—Dr. George W Crile, of Cleveland, Ohio; Dr. Seale Harris, of Birmingham, Alabama.

*Council*—The Council will meet at 3:00 P. M., Monday, May 15, for transaction of business affairs, and after on call of the body.

*House of Delegates*—Will meet on the thirteenth floor, that is, Registration and Exhibit floor, at 7:30 P. M., May 15th, and thereafter subject to call of the body. Prior to this meeting all Delegates should present their names and credentials to the Credentials Committee, which will meet on the Mezzanine floor, 1:30 P. M., Monday, May 15th.

The House of Delegates will also meet at 8:00 A. M., Mezzanine floor, May 16th. The first order of business being the election of officers for the year.

## GENERAL SCIENTIFIC SECTIONS

Will be held, beginning at 9:00 A. M., in the North room on the thirteenth floor. These meetings will be in charge of Drs. George W. Crile, Cleveland; Seale Harris, Birmingham; James Stevenson, and Ned R. Smith, Tulsa; Shade D. Neely, Muskogee; C. B. Taylor, Oklahoma City.

## SECTIONS

All Sections will meet at 1:30 P. M., Tuesday, May 16th, and at the same hour on Wednesday, May 17th.

Meeting places will be as follows:

*Surgery*—Venetian Room—on the roof.

*Medicine*—Crystal Room—Mezzanine floor.

*Obstetrics and Pediatrics*—Empire Room—Mezzanine floor.

*Eye, Ear, Nose and Throat*—Wilson Room—Mezzanine floor.

*Urology and Dermatology*—Parlor G—Mezzanine floor.

## GENERAL INFORMATION

The mornings of May 16 and May 17th will be entirely given over to General Scientific Sections. In order not to delay or crowd out any of these men, it will be necessary for the members to be promptly on hand at the time and place designated. There should be little, if any discussion of the papers, addresses or clinics which may be offered by these men.

All scientific sections will begin on the afternoons of May 16th and May 17th at the time and place designated on prominently displayed placards, which will be placed on the lobby floor of the Skirvin Hotel.

*Registration*—Will be held in the Southeast corner of the Rose Room, Skirvin Hotel, in conjunction with the commercial and scientific exhibits. Every member

should register at the earliest moment. Oklahoma City members, in order to avoid delay and confusion, should register at the earliest moment possible.

*Discussion of Papers Read Before Scientific Sections:* Men proposing to discuss these papers, should do so from the Chairman's platform or vicinity. In order that the reporters (if that particular section is so fortunate as to be able to secure a reporter), *may know who is discussing the paper.* Each discussor should clearly state his full name and address before he begins his remarks. Annually we lose much material in the form of discussion simply because this is overlooked.

*Telephone Service:* If one may be expecting possible telephone messages, he should contact the telephone operators on the ground floor, advising them of his probable location, etc. Finding a man by the means of "paging" is often difficult of accomplishment.

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## GENERAL MEETING

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TUESDAY, MAY 16TH

(Evening)

Thirteenth Floor Skirvin Hotel

*President's Address*—Open to the General Public.

8:00 *Invocation*—REV. EUGENE ANTRIM, President Oklahoma City University.

*Introduction of Guests*—HENRY H. TURNER, General Chairman.

*Address of Welcome*—LEROY LONG, Oklahoma City.

*Response*—R. M. ANDERSON, Shawnee, Retiring President.

*President's Address*—T. H. MCCARLEY, President, McAlester. (This address open to the general public).

9:30 *President's Reception and Dance.*

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## GOLF

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MONDAY, MAY, 15, 1933

*Annual Tournament*—Oklahoma City Golf and Country Club (Nichols Hills), starting at 9:00 A. M. Transportation, from Skirvin Hotel, will be provided. All green fees paid. Appropriate prizes, mostly donated by Oklahoma City merchants.

TUESDAY AND WEDNESDAY, MAY 16, 17

Golf Committee will make arrangements for members of the State Medical Association to play at any of the following courses, green fees to be paid by person playing:

Oklahoma City Golf and Country Club (Nichols Hills).

Lakeside Country Club.

Twin Hills Golf Club.

Lincoln Park Golf Course.

Edgemere Golf Course.

Tournament prizes of large number and splendid quality, all donated by the following Oklahoma City business firms. Prizes will be on display at registration booth at the Skirvin Hotel. We take this opportunity to thank the business firms for their generosity.

American Optical Company.

Auto Hotel.

Barth's Clothing Company.

Caviness Surgical Company.

Chig Men's Apparel.

Harbour-Longmire Furniture Company.

Ingram Drug Company.

Kerr Dry Goods Company.

Manly Office Supply Company.

McEldowney & Son Hardware Co.

Newbills Men's Furnishers.

Riggs Optical Company.

Roach Drug Company.

Rorabaugh-Brown Dry Goods Co.

Schiff-Mayer Office Supply Company.

Sturm's Clothing Company.

Tower Drug Company.

Western Bank and Office Supply Co.

Wick, the Druggist.

Committee: Drs. Wendell Long and Leo Cailey.

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## OBSERVATIONS ON THIOCYANATE THERAPY IN HYPERTENSION

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William C. Egloff, Lyman H. Hoyt and James P. O'Hare, Boston (Journal A. M. A., June 6, 1931), state that their results with thiocyanate therapy in hypertension, interpreted in the light of conservative control and with due consideration for the disagreeable symptoms produced, were so nearly uniform that they should at least serve as a warning against too great enthusiasm for this drug. Of twenty-five patients only two reacted favorably to the administration of sodium thiocyanate and even in these two the reaction was not particularly striking or different from what is seen in many other patients who have had no treatment whatever. In the remaining twenty-three cases, not only did the drug fail to lower the blood pressure or relieve the symptoms, but it produced very disagreeable side effects.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic

714 Medical Arts Bldg., Oklahoma City

**Acute Intestinal Obstruction (Occlusion Intestinale Aigue)** by J. C. Woods, Ottawa, *Comptes Rendus du Douzieme Congres de l'Association des Mediciens de Langue Francaise de l'Amerique du Nord*.

Pathologically, one must bear in mind congenital and acquired anomalies—stenosis, kinks, bands, tumors, twists, strangulated hernia.

The site and nature ought to be determined if possible, but that which is most important is to determine whether there is or is not an obstruction when the patient is seen for the first time.

Reference is made to the high mortality of 30% or 40%, based upon a compilation made by Souttar for the years 1925 to 1927. Referring to a statement by A. H. Burgess, Manchester, ex-President of the British Medical Association, it is pointed out that delay in the performance of the necessary surgical operation must be charged with this frightful mortality.

The plan of H. Mondor is followed in securing data upon which to base a diagnosis. One must not be misled by a practically normal pulse and a normal temperature in the early case. On the other hand, in the case of a patient who is suffering, one must recall that at first such a pulse and temperature may be significant. (Very free translation. The original is "chez un malade qui souffre, cela doit plutot nous rappeler que l'occlusion intestinale revet ce caractere au debut").

Pay particular attention to swelling and increased peristalsis in the early case. The swelling (ballonnement) is always localized and can thus be distinguished from general distention which is generalized. This localized swelling is curved or arched in contour. It may be central or lateral, durable or transitory. Beneath this localized arching (vous sure) one perceives the increased peristalsis. The mechanical situation behind these signs is the futile contraction of a loop of intestine above an obstruction. In this way one can sometimes have a fair idea as to the location of the obstruction.

Brusk or brutal palpation is useless, but gentle and methodical palpation shows the general consistence of the abdomen. There is resistance in the area of "ballonnement," but it is an elastic resistance. There is no abdominal rigidity.

The sign of Kocher—gradual pressure with quick release—does not cause pain. "Clapotage" or splashing is sometimes an early sign in obstruction of the small intestine.

By percussion dull and tympanitic zones may be identified. The area of localized distention (ballonnement) is always tympanitic. If there is dullness in suprapubic region a catheter should

be employed to be sure whether there is a distended bladder.

Auscultation may give valuable information, and is recommended by Kleinschmidt, Treves and Bayley. The mixture of moving gas and liquids produce metallic tinkles. After an enema there is rumbling at the point of obstruction if it is in the large intestine.

Rectal touch, or combined rectal and vaginal, sometimes gives surprising information.

Rapid pulse, elevation of temperature, oliguria, mydriasis, dyspnoea, muscular weakness, glycosuria, colics, cold sweats, dry tongue—these are signs in the later evolution of obstruction, and their presence mark the time when operation certainly should not be delayed any longer.

At this point, the author asks the question: "Can one administer purgatives? He answers it by saying that, if the condition is satisfactory, he does not hesitate to lavage the stomach and follow with a dose of castor oil, remarking that if there is an obstruction it will certainly be rejected. That if there is not an obstruction the effect may be good. At the same time, he speaks of enemata of milk and molasses or turpentine. However, in this connection, it is pointed out that the results may be deceiving. Three cases are reported in which such a procedure was carried out. In the first case the patient was satisfactorily relieved. In the second case there was temporary relief, but operation was necessary six weeks later. In the third case there was temporary relief, but a little later there was pain and vomiting, and an emergency operation was done, the patient expiring on the same day.

Reference is made, too, to the possible good effect of pituitrin and hypertonic chloride of sodium, intravenously. Attention is called to the advisability of administering anti-gangrenous serum, referring to the good results reported by Cope and Carson.

It is the author's habit to administer morphine a half hour before operation, but he calls attention to what he believes may be a disadvantage, in that it lessens peristalsis "of which the intestine will have without doubt need after the operation" to assist it in struggling against paralytic ileus. The contribution is completed by calling attention to the advisability of an early operation, the particulars of which should be adapted to the individual requirements. It is pointed out that the principal object of the operation is to liberate gas and products of putrefaction accumulated in the intestine. In the advanced case it may be necessary to provide for temporary relief only, and defer the definite investigation of the intestinal tract until a later date.

I have neglected to state that, in connection with the diagnosis, the author speaks of the value of X-ray examination, preferably without the use of opaque material (barium, etc.), either by mouth or rectum. It is pointed out that the opaque material may add to the difficulty, and that X-ray examination without it may show characteristic distention of the intestinal tract.

**Comments:** To the surgeon who has had considerable experience in acute intestinal obstruction, the advice to give a purgative will appear to be dangerous advice. It can do no possible good, and may be productive of disaster. This would seem to be borne out by the three cases reported by the author where one of them required an operation a short time after such procedure, and one of them died as a result of the delay because of the apparent relief due to the purgative.

The employment of pituitrin is no less dangerous than the employment of a purgative. In fact, when one considers the pathology, especially the muscular incompetence of the intestine proximal to the obstruction, one can see very readily how pituitrin, eserine, and like agents that produce terrific stimulation might result in complete intestinal incompetence so that even an operation following such treatment would not offer the same hope of relief.

The statement that if there is an obstruction a purgative will be rejected by the stomach is obviously an error. An obstruction of the large intestine may exist for sometime without pronounced nausea or vomiting.

The tentative conclusion that the administration of morphine before operation might be productive of bad results by interfering with peristalsis probably has no sound foundation. It is agreed that there is an incompetence of the intestinal musculature proximal to the obstruction, but one of the best ways to relieve it is to give it rest, and morphine will do that.

We have recently operated upon a patient who had had symptoms of obstruction for three days, accompanied by vomiting, abdominal pain and distention. According to the history there was temporary relief after two days. At operation there was a complete obstruction of the ileum by a gall stone with hard fecal material around it. Several inches proximal to the obstruction there were several perforations of the ileum. It was the conclusion that the primary obstruction was at this point; that perforation occurred, with temporary relief, but followed, necessarily, by peritonitis.

It has not been long since we saw another patient in consultation who had had symptoms of obstruction for almost a week. There was no vomiting, but there was a greatly distended abdomen. There were many evidences of toxemia, such as delirium, carphologia, restlessness. Operation disclosed a complete obstruction due to a neoplasm in the pelvic colon.

The urgent advice of the author to act with decision in the early stage of obstruction is sound, and deserves the emphatic support of the medical profession. This is the crux of the entire situation. The high mortality following acute intestinal obstruction is due to delay and the useless—too often dangerous—employment of questionable procedures, like purgatives, enemata and pituitrin.

—LeRoy Long.

(The following are abstracts of reports made at a meeting of the Paris Surgical Society (Société de Chirurgie) Jan. 25, 1933, and published in *La Presse Medicale* Feb. 4, 1933):

**Stenosis of the Pylorus After Ingestion of Hydrochloric Acid (Sténose du Pylore Après In-**

**gestion d'acide Chlorhydrique) by M. Moiroud, of Marseille.**

After a latent period of fifteen days the stenosis appeared. Laparotomy revealed extensive lesions of the pylorus and the beginning of the duodenum. A gastro-enterostomy, rendered difficult by the friability of the walls, resulted in the relief of the patient.

**Two Accidents In Connection With Taxis (Deux cas d'accidents du taxis) by Tanasesco and Barbilian.**

In the first case there were small perforations of the small bowel which were protected temporarily by adhesions. After an emergency operation there was an alarming peritonitis, but patient recovered.

In the second case a gangrenous loop of the intestine had been reduced into the abdomen, and the issue was fatal.

**Comment:** It cannot be repeated too often that taxis in connection with a hernia ought to be carried out with the greatest care, and for a very limited time.

**292 Operations on the Stomach (292 Operations de Chirurgie Gastrique) by M. Okinczyk.**

The 292 operations were performed since 1910. The total mortality was 7.8%. The author is convinced of the superiority of gastrectomy over gastro-enterostomy in the treatment of ulcer. In 180 cases of gastro-enterostomy there was a mortality of 6.6%. In 78 cases of gastrectomy there was a mortality of 8.9%. During the years 1931, and 1932, there were 83 operations on the stomach, 34 being gastrectomies without a death.

The reporter indicates the conditions in which this type of operation should be done. In a cicatricial stenosing ulcer there should be a gastro-enterostomy. He believes that in ulcers about the pylorus in what he terms "maladie ulcéreuse," a partial gastrectomy is the operation of most benefit.

Ulcer with hemorrhage is a difficult problem, since very often ligature is impossible or ineffectual, and gastrectomy, which should be the logical procedure, is extremely grave, even in connection with the transfusion of blood.

In perforation of ulcer into the peritoneal cavity, the plan of Okinczyk is to do a simple suture and a complementary gastro-enterostomy.

**Comment:** I believe that it is the consensus of surgical judgment that a gastro-enterostomy is usually not advisable in connection with the repair of an acute perforation. It is my impression that the procedure of simple closure of the perforation without any other operation is practiced by the majority of the surgeons in both Europe and this country.

—LeRoy Long.

**Suprapubic Drainage in Perforated Ulcer in the Gastro-duodenal Region (Le Drainage Sup-pubien dans l'Ulceré Perforé de la Région Gastro-duodenale). By Patel and Dejaques, Lyons. *La Presse Medicale*, Feb. 15, 1933.**

Two questions are asked: 1. Is suprapubic drainage of real service? 2. Is it without danger?



For several hours the drain is efficacious, but it rapidly becomes useless is a proposition that is laid down by the authors, and in proof a case is cited in which a pelvic abscess was formed, notwithstanding a suprapubic drain extended into the cul-de-sac of Douglas.

The chief danger pointed out is intestinal obstruction due to adhesions about the wound made for the drainage tube, and resulting in kinks, bands, constrictions, twistings and deformities. In proof, reference is made to reports by various French surgeons. In one case a loop of small intestine entered the wound and became fixed there. In another there was fixation of the omentum in the pelvis in such a way that obstruction was produced; in still another there was a volvulus of the small intestine.

It is advised that instead of the suprapubic drain, aspiration for the removal of extravasated material be employed, and that confidence be placed in the ability of the peritoneum to resorb what might be left.

These recommendations are made as being applicable to the situation within the first twelve hours after perforation. In later cases there may be a peritonitis, the exigencies of which would modify the plan with reference to drainage.

**Comment:** In the recent case, there is usually but little extravasated material in the lower abdomen, the most of it being in the space below the liver, from whence it may be quickly removed by either aspiration or soaking it up on a long gauze sponge. Even in the late case, the fluid is nearly all on the right side of the abdomen, and for that reason a drain close to the outer wall in the McBurney area has been, in our work, far preferable to a suprapubic drain.

Within the first few hours after perforation it is usually safe to remove the fluid in right upper abdomen and close without drainage. If a drain is employed it ought to be soft and flexible—a roll of soft rubber, for example.

—LeRoy Long.

**Early Diagnosis of Carcinoma of the Cervix. Dr. Walter Schiller, Vienna, Austria. Surgery, Gynecology and Obstetrics, Feb., 1933, Volume LVI, No. 2, page 210.**

This author points out that there are only two valuable methods of treating carcinoma; that is, operation or radiation therapy. He also makes the observation that further improvement in surgical technique or in radiation therapy is hardly to be hoped for, except possibly through physicists inventing new tubes and rays. Consequently, early diagnosis is the best means of improving the results in treatment of carcinoma.

He studied routinely all of the cervixes of uteri which were removed for one cause and another in the second gynecological clinic at the University of Vienna, and discovered a very early stage of carcinoma of the cervix prior to any projection beyond the basement membrane of the epithelial layer. He terms this the carcinomatous layer and this is characterized by the polymorphic and atypical nature of the epithelial cells plus a constant oblique line which separates the normal from the carcinomatous tissue. Much of the article is devoted to a defense of this lesion as a true early stage of carcinoma and not as a precancerous lesion. In cases in which this finding

was made on extirpated uteri the patients have subsequently developed extension of pelvic carcinoma, provided the entire layer of carcinomatous tissue was not removed. He has also shown that in amputations of the cervix which do not entirely remove such a layer, recurrences of evident carcinoma were found.

Realizing that such an early carcinoma would produce no elevation in the surface epithelium thereby being invisible on naked eye examination and the only means of identifying it would be a careful, prolonged search with the colposcope, he very ingeniously devised the test which utilizes Lugol's solution as the necessary reagent.

Glycogen is present in the surface epithelium of the vagina, but it is absent in carcinomatous tissue and in hyperplastic pathology, such as leukoplakia. Therefore, by the use of Lugol's solution, which stains the normal mucosa a mahogany brown within a minute's time, a very small area devoid of glycogen will identify itself quickly in this way. However, he points out distinctly that it is only the means of identifying an area and that the final diagnosis depends upon a histological differentiation. It is also true that the test is only valuable before any break in the surface epithelium, because upon any ulceration, the surface almost always being necrotic, stains brown with iodine and the method is therefore not helpful.

In cases in which an incipient carcinoma is suspected from the lack of iodine staining, a small surface biopsy can be obtained by the use of a sharp curet or spoon, and histological differentiation made under the microscope.

He also gives a resume of the results of the test in his clinic where the procedure is carried out routinely.

**Comment:** This work of Schiller's is probably one of the foundations of our quest for means to arrive at the diagnosis of carcinoma of the cervix in its incipient stage when treatment now at our disposal will yield results in the neighborhood of 100 per cent as against our average cure rate of 20 to 25 per cent now present in the cases seen.

Of course there will be considerable pathological discussion as to whether or not one may make a positive diagnosis of carcinoma prior to the time of any projection beyond the basement layer of epithelium, but it has been the feeling of a number of splendid observers for years that even prior to projections of the polymorphic and atypical cells, not only in the cervix, but for example in the ducts in the breast, they may be carcinoma cells never the less.

The value of Schiller's work lies in the fact that he has not only identified such lesions, but given clinical proof of their worth. The Lugol's test has, because of its simplicity, great promise, but it must be borne in mind that histological differentiation by the means of biopsy is still the only positive means of diagnosis in any stage.

—Wendell Long.

**Postoperative Pulmonary Complications. A Statistical Study Based on Two Years' Personal Observation. Donald S. King, M.D., Boston, Mass. Surgery, Gynecology and Obstetrics, Vol. LVI, No. 1, January, 1933.**

Statistics, based upon two years' personal observation by the author, of the postoperative pul-

monary complications occurring on the general surgical service of the Massachusetts General Hospital are presented. Figures were tabulated separately for the two years showing strikingly similar percentages in most instances. A brief summary combining the figures for the two years brings out the following points:

1. Purulent bronchitis develops in a large percentage of patients after operation. In 47 per cent of the cases sufficient bronchial obstruction had been present to give rise to atelectasis.

2. Eleven of the thirteen fatal cases were true bronchopneumonias, without evidence of preceding atelectasis.

3. Pneumonia, "pneumonitis," or collapse developed in 6 per cent of all operations and in 14 per cent of laparotomies and herniorrhaphies, and in 7.2 per cent of thyroid operations.

4. The pulmonary complication is regarded as primarily responsible for, or as a major contributing cause of death in 0.5 per cent of the total operations performed and in 1.2 per cent of the laparotomies in hernia operations.

5. In practically any given type of operation, the percentage of complications is at least twice as high for men as for women.

6. Among males, the incidence of complications following operations on the stomach and duodenum is 46.8 per cent; on the gall bladder, 35.6 per cent; and on the intestines, 26.2 per cent. This group was designated as the "bad risk" group.

7. Following gastrotomies and palliative operations for intestinal obstructions, 22.2 per cent of the patients developed pulmonary complications; and among the patients having gastric and duodenal suture, the incidence was 61.8 per cent.

8. After drained appendices, 22.5 per cent complications occurred as compared with 6.6 per cent following simple appendectomy.

9. Of the 426 complications, only 14.3 per cent had preoperative acute or chronic respiratory tract infection.

10. The seasonal curve does not parallel that for lobar pneumonia or show any consistent seasonal rise.

11. The somewhat lower percentage in 1931, is probably due to better bronchial drainage.

12. In laparotomies and herniorrhaphies, 12.7 per cent of the patients operated upon under inhalation anesthesia developed pulmonary complications; 16.6 per cent of those under spinal anesthesia; and 18.4 per cent of those under local anesthesia.

The conclusions of the authors were stated as follows:

1. Purulent bronchitis and "pneumonitis" are present in practically all instances of the type of pulmonary complications here described. Atelectasis is associated with the infection in about one-half the cases, but severe and fatal cases are usually true bronchopneumonias without evidence of atelectasis at any stage.

2. Complications occur especially in males following operations on the stomach, and duodenum, gall-bladder, and intestines.

3. Pre-operative sepsis and perforation, as well as malignancy and poor general condition, are important factors.

4. Season and pre-operative respiratory infection play a minor part.

5. From the statistical standpoint, the type of anesthesia is without significance.

**Comment:** This report is extremely interesting because it comes from an excellent clinic, and because it contradicts many of our time honored beliefs about postoperative pulmonary complications.

—LeRoy D. Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**The Treatment of Gonococcal Infections by Artificial Hyperthermia.** S. L. Warren and K. M. Wilson, *Am. J. Osb. and Gynec.* 1932, XXIV.

The human body will tolerate artificially produced temperature elevated to 41.5 C. (106.7 F.) which is sufficient to kill most strains of gonococci. Twenty women with various forms of gonococcus infection were treated with general hyperthermia. In some the infection was in the lower birth canal only, in some the tubes were also involved, two had arthritis, and three had chronic salpingitis. Results on the whole have been satisfactory, the symptoms and micro-organisms generally disappearing rapidly. None had exacerbation of symptoms. Failures were due to either insufficient treatment or to an unusually resistant strain of gonococcus. They do not recommend this method as a routine procedure. They describe the technic, and state that a simpler method, better tolerated by the patient is being planned. They state that the final method will be a combination of local and general heat probably, a lower level of general heat supplemented by a higher level of local heat.

**Tryparsamide in Treatment of Syphilitic Optic Atrophy.** David Lees, *Archives Ophthalmology*, 1932, VIII.

At a recent meeting of the Ophthalmological Society of the United Kingdom, Lees, reported that at a venereal-disease clinic of the Royal Infirmary it has been found that tryparsamide used in correction dosage checked the atrophy and the patient was able to continue his occupation. Bismuth as an adjunct to the tryparsamide is an aid in apparently hopeless cases.

**The Arsphenamines as Factors in the Production of Neuro-syphilis.** Paul A. O'Leary and J. R. Rogin, *Arch. Derm. and Syphilology*, 1932, XXVI.

A clinical study of 500 cases of neurosyphilis examined in the section on dermatology and syphilology of the Mayo Clinic during 1928 and 1929, was undertaken in an attempt to determine the part that modern treatment of syphilis plays in the production of neuro-syphilis.

That arsphenamine predisposes to, or induces, the development of neuro-syphilis is not borne out



by this study. The treatment is of pronounced value in reducing to a minimum the clinical, serologic, and spinal fluid manifestations of neurosyphilis.

**Urologic Aspects of Sexual Impotence.** Abr. L. Wolbarst, *Jour. Urology*, Jan., 1933, page 77.

The author in summary states, 1. In a study of 300 cases of male impotence 44% gave a history of previous gonorrhea, 56% gave no such history. 2. 51% admitted long continued "withdrawal," excessively frequent coitus, frequent masturbation and ungratified sex desire. 3. Gonorrhea and abnormal sex living constitute the most frequent cause of impotence. 4. Urethroscopically, pathology was observed in 89% of cases with gonorrheal history and 77% of non-gonorrheal cases with a history of abnormal sex living. 5. Seminal vesiculitis is the invariable common factor observed in all cases regardless of previous history. 6. Pathology in the posterior urethra is not the cause of the impotence but reflects the primary pathologic condition existing in the vesicles. 7. Treatment must be accorded all possible etiologic factors, but especially the vesiculitis and the urethral pathology. 8. Vasotomy is probably the most effective single therapeutic measure for the vesiculitis and the impotence. 9. Prognosis is good generally if all etiologic factors are accorded appropriate treatment. Complete cure was attained in 77% of his series.

**Acquired Reno-Colic Fistula—Report of Case.** R. W. Barnes, *Journal Urology*, January, 1933, page 111.

The author reports a case of reno-colic fistula resulting from a neglected calculous pyonephrosis rupturing into the ascending colon. Diagnosis was made by showing the escape of pyelographic fluid into the cecum. Nephrectomy and closure of opening into cecum was successfully accomplished. This case emphasizes the importance of earlier urological study in cases with continued pyuria.

**Bismuth in Neurosyphilis.** H. G. Mehrtens, and P. S. Pouppirt, *California and Western Medicine*, Vol. XXXVIII, No. 2, page 78.

In conclusions the authors state that bismuth has an important place in the treatment of neurosyphilis, and in the anionic form penetrates into the central nervous system. Their clinical experience with iodobismutol containing Bi as an anion indicates that its therapeutic effectiveness parallels its ability to penetrate into the meninges. The possibility suggests itself that the clinical usefulness of any bismuth preparation in the treatment of neurosyphilis is dependent upon its ability to assume electronegative form.

## BOOK REVIEWS

**Diseases of the Heart.** Described for Practitioners and Students. By Sir Thomas Lewis, C.B.E., F.R.S., M.D., D. Sc., LL. D., F.R.C.P., Hon. D. Sc. (Michigan), Physician in Charge of Department of Clinical Research, University College, London; Physician of the Staff of the Medi-

cal Research Council; Physician in Chief (pro Tem) Peter Bent Brigham Hospital, Boston; Honorary Fellow New York Academy of Medicine; Corresponding Member Association American Physicians, and Interstate Post-Graduate Medical Association. Illustrated, Cloth 297 pages, 1933, Price \$3.50. The MacMillan Company, New York.

The author undertakes in this volume to place at the disposal of students and medical practitioners the outline of his clinical teaching on diseases of the heart, as this has developed in his talks to his own hospital students. After teaching more than twenty years he seeks to place upon its proper basis that which he had himself seen and proven to be true. Simplicity has been his aim, therefore much voluminous material has been excluded, as is found in more extensive works on diseases of the heart. However, he has left the vital and necessary essentials, and has written them in such form as to make them easily readable and entertaining. Naturally during the years of his work he has seen it greatly bolstered by the discovery and use of X-ray and the electrocardiogram, without which, many cases are not interpretable and the clinician finds himself more or less at sea.

**Clinical Diagnosis. Physical and Differential.** By Neuton S. Stern, A.B., M.D., (Harvard), Associate Professor of Medicine, University of Tennessee School of Medicine, Memphis. Cloth 364 pages, price \$3.50. The MacMillan Company, 1933, New York.

This book, the author states, is the outgrowth of eleven years' teaching of medicine, and gives the methods the author uses with his own students. It has been written because there was nothing else available that filled the needs of the students as they were learning how to make a diagnosis.

Clinical diagnosis has been taught in three divisions:

(a) Didactic "text-book" teaching of the technique of history taking and physical examination.

(b) Practical history taking and physical examination, the patients being from the out-patient department.

(c) Differential diagnosis.

Much attention is given to the findings associated with tuberculosis and heart diseases, the courses in differential diagnosis being modeled after that once used by Dr. Richard C. Cabot.

**The Medical Secretary.** By Minnie Genevieve Morse, Member Board of Registration, Association of Record Librarians of North America, Author of "Case Records in Small Hospitals." Cloth 162 pages. The MacMillan Company, New York, 1933. Price \$1.50.

This little volume is the outgrowth of ten years as medical secretary and nine as a member of the Executive Staff of a General Hospital, three of the latter have included the training of young women for hospital record room work. This should be a very helpful aid to those keeping hospital records.

**Classification and Diagnosis of Heart Disease,**

**Criteria For.** By the Criteria Committee of the Heart Committee of the New York Tuberculosis and Health Association, Inc., Drs. Joseph H. Bainton, Arthur C. DeGraff, Robert Levy and Harold Pardee. Approved by the American Heart Association. Cloth, illustrated, 129 pages, 1933, 3rd Edition. Published by the New York Tuberculosis and Health Association.

The object of this work is to uniformize nomenclature, bring together uniform criteria upon which diagnosis and discussion is based. We need a similar attempt at uniformity and adoption of uniform terms to fit the findings in many other medical matters. As it is, in many medical matters the reader is constantly confronted and confused by the fact that one writer uses one set of names or descriptions, while another something entirely different for the consideration of identical subjects. Probably ten to twenty-five per cent of the mass of our written material could be entirely deleted without harm to the subject matter, if our writers could get together upon a basis of uniformity. In this connection it is only necessary to mention diseases of the thyroid and kidneys as examples of the many different terms or sets of terms used to describe the findings, in order to see the point.

**Sixth International Congress of Military Medicine and Pharmacy, and Meetings of the Permanent Committee.** The Hague, Netherlands, June, 1931. Report of Commander William Seaman Bainbridge, M.C.—F., U.S.N.R., and the Delegation from the United States. This volume, issued by the United States Printing Office, Washington, 1933, may be obtained for \$1.00. It contains much matter of special interest to the Medical Reserve Corps of the Army, Navy and to similar members of the United States Public Health Service. Naturally it stresses preparation, a work which the writer and the Journal believes should never be allowed to become dormant, on the contrary it should be the constant aim of every medical man, who is likely to be of military age in any possible future military or naval operation, to prepare himself in advance should he be called to duty in time of national emergencies demanding medical services. It should not be forgotten that the Army and Navy, and allied branches will need more than just good physicians and surgeons. Treating the sick and injured, we know more or less about, but the exigencies of a whole Nation suddenly called, often against its will, but called nevertheless, to take charge of the many phases to be met, calls for men trained in much technical matter outside of the domain of medicine and surgery, strictly speaking. That necessity and demand makes such works as these congresses worthwhile. They keep alive the necessities which must be met, so, all such men should read everything pertaining to such problems. Practically every country except Russia was represented at the Congress by its best Military and Naval authorities.

#### "MYXEDEMA HEART" WITHOUT EVIDENCE OF CARDIAC INSUFFICIENCY

In two cases of "myxedema heart," observed by David Ayman, Boston; Harold Rosenblum, San Francisco, and Mark Falcon-Lesses, Boston (Journal A. M. A., May 14, 1932), both patients had clinical, roentgenographic and electrocardiographic manifestations which were characteristic

of the condition as described by previous workers and which became normal after adequate treatment with thyroid. Enlargement of the heart and its return to normal with adequate thyroid treatment is stressed as the one diagnostic feature of "myxedema heart," since the other abnormalities are usually found in all cases of myxedema. Factors other than thyroid medication may decrease the size of the heart during treatment for myxedema. Little, if any, evidence of heart failure was found in either of the cases reported, and hence it is believed that cardiac insufficiency, although sometimes found, is not characteristic of "myxedema heart." The suggestion is made that "myxedema heart" may be more common than is usually supposed, and therefore the need of securing serial teleroentgenograms of the heart and electrocardiograms before and during the treatment of every patient with myxedema is indispensable to exclude the possibility of the presence of "myxedema heart."

#### ISOLATION OF BRUCELLA ABORTUS FROM TONSILS

Charles M. Carpenter and Ruth A. Boak, Rochester, N. Y. (Journal A. M. A., July 23, 1932), isolated *Brucella abortus* from eight of fifty-six pairs of tonsils. They do not desire at this time to convey the impression that *Brucella abortus* is a cause of tonsillitis or of hypertrophied tonsils. Nevertheless, in experimental and domesticated animals the infection localizes in lymph and lymphoid tissue, frequently producing a focal or general lymphadenitis, as well as a splenitis. At the onset of many cases of undulant fever there is a reddening and injection of the fauces, pharynx, tonsils and peritonsillar tissue, not unlike that seen in an acute infection of the upper respiratory tract. Cervical adenitis is not uncommon. That these pathologic changes are specific of *Brucella abortus* infection is not known. The organism may invade the tonsil and multiply or accumulate there until the resistance of the host is decreased from fatigue or from disease, permitting its invasion of the blood stream. The most important deduction is that the presence of the organisms in the tonsils must be the result of ingesting dairy products containing *Brucella abortus*. The incidence of positive results undoubtedly depends on the virulence and the numbers of *Brucella abortus* in the raw milk supply.

#### AMEBIC GRANULOMAS OF LARGE BOWEL: CLINICAL RESEMBLANCE TO CARCINOMA

Herbert Gunn and Nelson J. Howard, San Francisco (Journal A. M. A., July 18, 1931), report three cases of amebic granuloma of the large bowel. They assert that the pathologic process consists in persistence of an isolated chronic ulcer with progressive erosion of the wall of the bowel. In response to the amebic ulceration and secondary infection, large amounts of edematous fibrous granulation tissue appear. This process affects the entire bowel wall and the neighboring mesocolic fat. As a consequence, tumor masses are formed. These granulomas may be easily mistaken for carcinoma, for they give symptoms, physical signs and radiologic appearances that may be identical with those produced by carcinoma. *Endameba histolytica* is world-wide in its distribution, and infections with it do not necessarily produce diarrhea or dysentery.



## CURRENT CRITICISMS OF PSYCHIATRY

Sanger Brown II, Albany, N. Y. (Journal A. M. A., August 27, 1932), divides current criticisms of psychiatry into two classes. In the one are activities which, although more or less identified with the mental hygiene movement, are not controlled by psychiatrists or exclusively of psychiatric nature. In this class belong intelligence tests, behaviorism and, to some extent, psychoanalysis. In the other class are activities of strictly psychiatric origin, and psychiatrists are responsible for them. These include such activities as child guidance, public education in mental hygiene, the psychiatric social worker and expert court testimony by psychiatrists. Mental hygiene has attracted much attention to itself in recent years because of the increasing interest of many persons in the functioning of the mind. A discussion of mental mechanisms, an interest in self analysis or in analyzing other persons, in investigating the working of the mind and in evaluating emotions has taken place in the daily press, in public addresses and elsewhere. Biologists, psychologists, historians and educators, as well as journalists, novelists and public speakers, have expressed themselves on the subject of mental functions. It would be misleading to think that psychiatrists and mental hygienists were the sole originators of this movement, as some critics seem to believe. Psychiatry has been known to a mere handful of people until quite recently. The present age has brought with it complications in society which have resulted in conflicts affecting both classes and individuals. Where these conflicts seem to be of mental origin, they should be investigated and studied just as the causes of physical disease are studied. This point of view has doubtless increased the public's interest in mental hygiene. In taking up this question of mental health, psychiatry is merely paralleling what general medicine has done in public health. If this movement does not have the guidance of responsible leaders, the field will be left open to faddists and fanatics who foist their theories on the public the same as quacks have succeeded in doing at times in the treatment of physical diseases. If universal harmony existed in the world today, a mental health program would be superfluous. But more than a fair share of the ills of the world arise from circumstances that might be avoided through fuller understanding by man of his own psychology and mental outlook. Society suffers from mental as well as from physical ills. Some day it may be possible to recognize these unhealthy mental trends more clearly than now. In the meantime, concrete evidence of lack of satisfactory mental poise on the part of a considerable percentage of the population is seen not only in frank mental disease but also in the neuroses, the psychoneuroses, emotional instability, delinquency, crime, problems in children, maladjustments between married persons, and other evidences of lack of sound mental health in various forms. With these conditions so prevalent, the need of education in the field of mental health should be evident. In fact, the advantages of teaching mental health as a part of all education may be appreciated in the future. Members of the medical profession and others interested in social welfare will render an important service if they not only refrain from ill considered criticism of the mental hygiene movement but lend their support to recognized mental agencies.

## NONTUBERCULOUS ARTHRITIS

M. J. Shapiro, Minneapolis (Journal A. M. A., June 4, 1932), calls attention to the fact that in regard to the classification of chronic arthritis proposed by the American Committee for the Control of Rheumatism, investigators are finding that they are unable to describe adequately certain joints in a way sufficiently clear to exclude mistakes. The classification gives one phase of the disease. It is too fixed and does not permit the free incorporation of new information. The author enlarges on the classification proposed by the committee, making it less archaic, more descriptive and at the same time more cumbersome. The classification of chronic arthritis that he proposes is not based on any one particular phase but tries to consider the phases of the subject that seem important: the clinical, etiologic, pathologic, anatomic and roentgenologic aspects. It is hoped that the use of this type of classification will give a complete unmistakable picture of any type of arthritis. It allows for addition or subtraction as experience warrants, without destroying the general structure. It is true that the resulting terminology is cumbersome, but until one is able to formulate a classification based on known etiology, lengthy descriptive terms seem necessary.

## MORTALITY FROM ABSCESS OF BRAIN

On the basis of his observations in fifty-one verified cases of abscess of the brain, Francis C. Grant, Philadelphia (Journal A. M. A., Aug. 13, 1932), makes an attempt to determine the influence on the mortality from this condition of the following factors: difficulty in diagnosis and localization, time of treatment and method of treatment. His conclusions are as follows: 1. Brain abscess is not more difficult to diagnose and localize than any other intracranial lesion, provided sufficient care is taken in the study of the case. 2. A brain abscess should not be drained until it seems certain that encapsulation has occurred, preferably in the sixth week after the onset of symptoms. 3. Drainage by a small rubber tube has given satisfactory results. No matter what method is used, unnecessary trauma to surrounding tissue is to be scrupulously avoided.

## POSTOPERATIVE PULMONARY COMPLICATIONS: STUDY OF THEIR RELATIVE INCIDENCE FOLLOWING INHALATION ANESTHESIA AND SPINAL ANESTHESIA

A. Lincoln Brown and Martin Warren Debenham, San Francisco (Journal A. M. A., July, 1932), present statistics showing the relative incidence of postoperative pulmonary complications following inhalation anesthesia and subarachnoid anesthesia. In their series of 812 cases, postoperative pulmonary complications were 4.29 times more frequent after subarachnoid anesthesia than after inhalation anesthesia in spite of the fact that more "bad risk" patients were operated on under inhalation anesthesia. The adverse ratio for subarachnoid anesthesia was found regardless of the region of the body operated on or the type of operation performed. The more closely the operative procedure approached the diaphragm, the greater was the incidence of postoperative pulmonary complications.

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Garvin.....	Ray H. Lindsey, Pauls Valley	J. R. Callaway, Pauls Valley
Grady.....	J. F. Renegar, Tuttle	L. E. Woods, Chickasha
Grant.....		
Greer.....	W. O. Dodson, Willow	J. B. Hollis, Mangum
Harmon.....	James E. Jones, Hollis	R. H. Lynch, Hollis
Haskell.....		R. F. Terrell, Stigler
Hughes.....	W. L. Taylor, Holdenville	G. W. Diggs, Wetumka
Jackson.....		E. W. Mabry, Altus
Jefferson.....	D. B. Collins, Waurika	W. M. Browning, Waurika
Kay.....	Merle C. Clift, Blackwell	L. H. Becker, Blackwell
Kingfisher.....		
Kiowa.....		
Latimer.....	E. L. Evins, Wilburton	T. L. Henry, Wilburton
LeFlore.....	E. R. Booth, LeFlore	W. M. Duff, Braden
Lincoln.....	F. D. Brown, Sparks	C. W. Robertson, Chandler
Logan.....	J. E. Souter, Guthrie	J. L. LeHew, Guthrie
Marshall.....	P. F. Robinson, Madill	J. H. Veazy, Madill
Mayes.....	L. C. White, Adair	W. J. Whitaker, Pryor
McClain.....	I. N. Kolb, Blanchard	J. M. Bonham, Hobart
McCurtain.....		
McIntosh.....		Wm. A. Tolleson, Eufaula
Murray.....	P. V. Anadown, Sulphur	Howson C. Bailey, Sulphur
Muskogee.....	C. V. Rice, Muskogee	Shade D. Neely, Muskogee
Noble.....	J. W. Francis, Perry	A. M. Evans, Perry
Nowata.....		
Okfuskee.....	C. M. Cochran, Okemah	C. M. Bloss, Okemah
Oklahoma.....	LeRoy Long, Oklahoma City	Bert F. Keltz, Oklahoma City
Okmulgee.....	I. W. Bollinger, Henryetta	M. B. Glismann, Okmulgee
Osage.....	C. H. Guild, Shidler	M. E. Rust, Pawhuska
Ottawa.....	W. B. Smith, Miami	J. W. Craig, Miami
Pawnee.....		
Payne.....	D. J. Herrington, Cushing	Emmett O. Martin, Cushing
Pittsburg.....	W. C. Wait, McAlester	L. C. Kuyrkendall, McAlester
Pontotoc.....	C. F. Needham, Ada	Hervey A. Foerster, Ada
Pottawatomie.....	Clinton Gallaher, Shawnee	H. G. Campbell, Shawnee
Pushmataha.....	D. W. Connally, Nashoba	E. S. Patterson, Antlers
Rogers.....	J. C. Bushyhead, Claremore	W. A. Howard, Chelsea
Seminole.....	W. S. Martin, Wewoka	A. N. Deaton, Wewoka
Stephens.....	C. N. Talley, Marlow	D. Long, Duncan
Texas.....	Wm. J. Risen, Hooker	R. B. Hayes, Guymon
Tillman.....		
Tulsa.....	Chas. H. Haralson, Tulsa	Carl F. Simpson, Tulsa
Wagoner.....		
Washington.....	F. S. Etter, Bartlesville	J. V. Athey, Bartlesville
Washita.....		
Woods.....	D. B. Ensor, Hopeton	O. E. Templin, Alva
Woodward.....		C. E. Williams, Woodward

NOTE—Corrections and additions to the above list will be cheerfully accepted.



# THE JOURNAL

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## LOW CERVICAL CESAREAN SECTION

L. C. NORTHRUP, M.D.  
TULSA

The object of this paper is to review the statistics, make comparison, and emphasize the advantages of low cervical cesarean over the old classical operation.

Low cervical cesarean has been the operation of choice in Europe for twenty years, but it is only since the war that it has been accepted in this country. This acceptance is due mostly to the favorable reports of Hirst, Polak, Beck, DeLee, and a few others.

At the beginning, low cervical section was done only on cases that had been in labor for hours, or cases where delivery had been attempted with forceps, while most of the elective cases were operated by the classical method. This should be considered when making a comparison of statistics.

Reynolds claims a mortality for classical cesarean of 1.2 per cent before labor, 3.8 per cent when done early, and 12 per cent when done late. Routh gives 2.9 per cent before rupture of membranes, and 10.8 per cent after, and 34.3 per cent after repeated examination, or attempts at delivery. Bailey reported in October, 1926, 92 classical cesareans with a mortality rate of 15.5 per cent. Wetz of Detroit in 1925, reported on 143 high sections with 19 maternal, and 15 infant deaths.

In 1925, DeLee reported on 338 low cervical cesarean operations done at the Chicago Lying-in with 2 deaths, one from ether pneumonia, and one from uremia. During this same period, there were 136 classical sections done at the same place with 7 deaths.

In 1914, Opitz reported on a series of 443 low cervical sections for contracted pelvis without a single death. Kunsten reports 103 low cervical sections with a mor-

talidity of 2 per cent. In 1927, Stein, and Leviathal report 40 consecutive low cervical sections with no deaths. They believe that this low morbidity could not have been obtained by any other method of delivery, such as high forceps, version, or classical section. Greenhill in 1915, reported on 874 low cervical operations with a maternal mortality of 1.26 per cent, 35 per cent of these operations were done with ether as anesthetic, and 3 of the deaths were due to ether pneumonia. 50 per cent of the cases were in labor at the time of the operation, some of them as long as four days. In 21 per cent of the cases the membranes were ruptured when operation was performed, and the interval between the rupture of the membranes and the time of operation varied from one hour to eight days.

The most common cause of death following classical section is peritonitis. Peritonitis is caused in two ways: first, by contamination of peritoneal cavity by spilling infected uterine contents at time of operation, and second, by leakage of infected lochia from the uterine cavity through the suture line, into the peritoneal cavity after operation. In the classical operation the incision is made through the thick muscular part of the uterus. After the delivery this part of the uterus contracts, and the sutures became loosened, allowing the infected lochia to leak through, into the peritoneal cavity. Experience has proven that it was this leakage after the operation that caused most of our trouble.

In the past three years I have delivered 24 private patients by low cervical section with no maternal deaths and only one infant death, which was due to premature separation of the placenta. I am convinced that this operation does not require any more skill than the classical operation. In my experience it has not required any more time.

I have used nothing but ethylene for anesthesia. The patient is put into extreme

Trendelenburg position. One cc. of pituitrin is given just before the incision is made. This will take effect by the time the baby is delivered. The incision extends from just below the umbilicus down the mid-line about 4 to 6 inches. I have found this, ample room. As soon as the peritoneal cavity is opened, hot wet packs are carefully placed around the uterus. A transverse semilunar incision is made through the visceral peritoneum covering the uterus. This incision is made parallel to and about one-half inch above the attachment of the bladder. Next the peritoneum is carefully dissected up about two inches to make a flap. Then with the finger, the bladder is separated from the uterus, a distance of about two or three inches down. This is surprisingly easy to do without injury to the bladder. One quarter grain of morphine is given now to control pain after the operation. The incision into the uterus is made about an inch below the line of the incision in the visceral peritoneum. This incision follows the same transverse semilunar direction being careful not to cut into the broad ligaments on either side. It is surprising how thin the uterus is at this place and how little bleeding there is. If this incision is properly made, the delivery of the baby is a very simple, and easy procedure. A little pressure is made on the fundus with one hand, and by a little manipulation with the fingers of the other hand, the cut edges of the uterus can be pressed back over the baby's head. As soon as the baby is out, the membranes are removed, and the incision in the uterus is closed with two rows of chromic catgut. Next the upper flap of peritoneum is sutured to the uterus below the incision in uterus, and the bladder flap is then sutured above, overlapping the two flaps about one inch. The peritoneum over this part of the uterus is thick and easy to handle without tearing. The two flaps cover the incision overlapping in such a way that any leaking into the peritoneal cavity after operation is impossible. The packs are removed and abdomen closed.

The most surprising thing about the operation is the almost total absence of bleeding both during the operation, and afterwards. Keistner, in discussing the various types of section, showed that the results of leading German obstetricians, utilizing the low cervical, were the most favorable. DeLee, says that in their experience, convalescence is most satisfactory.

There is almost a total absence of the usual post-operative discomforts. Not a one of my 24 cases ever vomited. Most of them were able to eat at the end of twenty-four hours. They were allowed the back rest on the third day, and all but two went home on the seventh day. Involution was more rapid than in the average normal delivery. There has been no shock, sepsis, hemorrhage, or peritonitis. DeLee says it is impossible to get such a perfect convalescence from difficult delivery. Eight of my patients were operated after trial labor of twenty-four to thirty-six hours. In five cases, the bag of waters was ruptured at the beginning of labor. In one case, I had attempted delivery with forceps.

#### CONCLUSIONS

Low cervical cesarean is safer at any stage of labor than the classical.

Low cervical section is not more difficult, requires no more skill, and very little more time.

Convalescence is shorter, and almost entirely free from the usual post-operative complications.

I believe low cervical section is safer than a difficult forceps delivery. It carries a lower morbidity, and a lower mortality rate.

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410 McBirney Bldg.

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#### PREPAYMENT PLANS FOR HOSPITAL CARE

R. G. Leland, Chicago (Journal A. M. A., March 25, 1933), points out that a pertinent question which has been avoided by the promoters of hospitalization schemes is: Does the public need at the present time an increased amount of hospital care or will it benefit more from a greater amount of medical care in the home? Whichever way the question is answered, disregard of the principles that should govern all agencies equipped to render medical care is certain to result in an ultimate lowering of the quality of medical care. The physical capital in medicine, in whatsoever form it may exist, must always remain the instrument wielded by the personal skill and knowledge and must ever conform to an undepreciated standard of medical values. Anything that separates the mental capital from the working tools and institutions of the profession is sure to prove destructive to the medical profession and injurious to the public.



PRESIDENT'S ADDRESS — SOUTH-  
EASTERN OKLAHOMA MEDI-  
CAL ASSOCIATION\*

H. B. FUSTON, M.D.,  
BOKCHITO

*Mr. President and Friends:*

It would be a piece of affectation on my part if I should fail to acknowledge my appreciation of the honor conferred on me by my election to preside over the destinies of this society for the coming year. I am going to show my appreciation not only by word of mouth but more by an energetic devotion to the duties of my office.

We all have our ideals; we all have visions; we all have dreams. My ideal is a united medical profession in this district. In my dreams, ever since I joined this noble profession, I have dreamed of the time when every physician should love and esteem his brother physician as he does himself and be as solicitous of his welfare and reputation, professional and personal, as he was of his own; and in my visions, I have seen the medical profession honored and revered for the ever increasing service which they have been able to render their patients and the community which has set them apart and licensed them to practice.

These ideals, these visions are not irredescent dreams. If we go to work with a singleness of purpose, they can be realized.

There comes to us from the dawn of history a fable that was retold by Aesop. A man had six sons; these sons were torn apart by internal dissensions and quarrels. One day the father presented them with six canes tied in a bundle and asked which one of them could break the canes. One after the other took them across his knees and failed to break them. When they had all failed, the father untied the canes and broke them one by one. You, my sons, are the six canes; as long as you stay together, you are invincible; but as long as you are torn apart by petty jealousies, any two men can overcome you.

There is an old saying that is as true today as the day that it was uttered: "If you know a man, you can't dislike him." The great drawback to universal brotherhood is the lack of acquaintance. In every man,

there are lovable traits. Most men are as good and as honest and as willing to do right as we are. If we don't know them, how can we find out their good traits?

When Theodore Roosevelt was ranching in the Bad Lands of North Dakota, a rancher saw him. Roosevelt wore spectacles, had cityfied airs, used good grammar, and was in short, in the other's estimation, a cityfied effeminate dude. The man boasted that the next time that he saw Roosevelt he was going to pick a quarrel with him and give him the worst whipping that Roosevelt had ever had. When Roosevelt heard of this, he called on the man, told him of what he had heard and asked the man why he felt that way about him. The man admired Roosevelt's courage, found out that he was so nearsighted that he was helpless without spectacles, that his language was natural, and that in all he was a good scout. They became good friends and were useful to each other.

That we may come to know each other better, I wish to urge on every member to attend all our county and district and state meetings. As we become acquainted with each other, cooperation will take the place of strife and the petty jealousies that only too often are found in our ranks.

"In union there is strength. Together we stand; divided we fall." No bee working alone produced a hive full of honey. No man separated from his fellows has ever been able to accomplish the work that he could do if he had the cooperation of men in the same profession.

We can all take a lesson from the labor unions. There was a time in England when it was against the law for a mechanic to bargain with his employer for his wages. The pay was fixed by the government without consultation with the worker. It was only as the workers banded themselves together in labor unions that they were able to get a reasonable return for their labor and decent hours of work. Today whenever the voice of labor speaks through its leaders, it gets a respectful hearing from law-makers and kings.

The good that our medical societies have done cannot be overestimated. We have been able to steadily increase the remuneration from our services. We have been able to raise the standard of education for entrance into the profession. These things we have been able to do even though we

\*Delivered at Roebuck Lake, Hugo, Oklahoma, October 20, 1932.

have not had the cooperation of the majority of the medical profession. Not only do we not have all the physicians in our societies that are entitled to join, but even among the members of our various societies many have not shown the interest that they should by attending our meetings and taking part in our proceedings and giving us the benefit of their counsel and the inspiration of their presence. We have a good nucleus for as fine a district society as there is in Oklahoma. I believe that it ought to be possible to double our district membership and more than double the attendance at our district meetings. Will you not, as members, help me in a membership drive and an attendance drive until every member of our profession who is entitled to membership has been enrolled? Let's talk up our district society.

The educational value of our district society is directly dependent on the size of our society as well as on the attendance at our meetings. If we can be sure of a large attendance, we can get the best men in our state and surrounding states to come and read papers to us. As we hear these papers, we learn many new things and become inspired to renewed efforts in study; our practice does not then become just a dull routine but it challenges our best efforts and exercises our keenest intelligence. It is the group action and the group cooperation that has given us every progress that the science has known. Diphtheria antitoxin, the Shick test, antivenin serum, the discovery of insulin and its application was the result of the spirit of cooperation within our ranks.

I am president of this society for one short year, but you and I are members of this society for life. Let us then during this coming year put our best efforts into the building up of our district society until we have the very best district society in our State. I pledge you my best efforts to this end and my confidence in you is that you are not going to let me carry the burden alone but you are going to rally to my help until we have succeeded in having the best year that this society has known.

## PREVENTIVE MEDICINE\*

R. D. WILLIAMS, M.D.

Full Time County Health Officer  
McCurain County  
IDABEL

In the beginning of this paper I wish to say that I think the greatest opportunity and the greatest work of the physician of today is in preventive medicine, and the greatest work of this association should be on preventive medicine and the spread of disease, not only this association, but every association in America today.

The study of preventive medicine has thrown diseased conditions into two great groups, first the so-called communicable diseases, that are responsible for the majority of deaths in the earlier periods of life, and second, the degenerative diseases of the heart, the kidneys, the arteries, that cause the death of so many people beyond forty years of age.

It is an interesting and rather curious fact that in the battle of this first group of diseases the United States leads the world in the vigor and success of its campaigns. United States health officers have taught Germany the principles of sanitation. They have shown France that Panama could be made habitable to the white man and they have sent expert aid in response to England's call for fighting Bubonic plague. Under the efficient measures adopted in this country, deaths from all of these communicable diseases have declined in the last thirty years. On the other hand, we have fallen behind the enlightened countries of Europe in the matter of dealing with the degenerative diseases. In England, Wales, Prussia, France, Italy and Sweden there has been a gradual decline in deaths from the degenerative diseases. In our country there has been an increase of 41 per cent in the last fifteen years. One would naturally ask why so much attention is given by the public in general, and by the health authorities in particular, to the one group on causes and so little to the other. The answer is not easy, unless it is due to the fact that it is only within the last few years that any protest has been raised against premature deaths from chronic diseases. When a death from typhoid fever occurs, we readily say that it is a death that ought to have been prevented.

\*Read before the Southeastern Oklahoma Medical Association, Roebuck Lake, Hugo, Oklahoma, on October 20, 1932.



We search and usually find the source of infection, and by removing the cause warn the people against the dangers where we find the enemies lurking in that locality. When a man of forty-five dies of heart disease or nephritis, we shake our heads at the mysterious providence that has carried off a useful man in the prime of life. When a man of sixty dies of such maladies, we accept it as a natural termination of life that has reached the scriptural age of three score and perhaps a little more.

Fisk happily compares the attacks of man's microscopic enemies to what in current war phraseology are described as *drives*. These drives of the infectious diseases have met with increasing success.

Yellow fever, tuberculosis and others are still within our lines, but they, too, have been driven back and routed from the first line of trenches and now are scampering for shelter in the second and third lines.

Another line of attack called "nibbling" by the French, we are not meeting successfully in this country. The nibbling of focal infection in decayed teeth, diseased tonsils, intemperate food habits, physical and mental strain. These do not produce the immediate effect found in the communicable diseases, but they weaken our defenses and often in later years bacteria lurking in hidden recesses come forth to shorten the span of life.

The Bible puts the span of life at three score years and ten.

The more we learn of that wonderful organism, the human body, the more we are convinced that the Bible is right and that the average person should live seventy years at least, barring accidents.

The average span of life today, however, is nearer forty than seventy, due mainly to certain diseases that can be prevented.

Prevention is better than cure, is one of the greatest and wisest sayings, and one of the most neglected. When mankind uses preventive medicine against disease more generally there will be considerably less sickness, and a great many men and women will be hale and hearty, and seventy years young.

Machines last for years and years when they are given careful and proper attention. The body is a divine machine like which there has never been anything made

to compare. It is so wonderful, it puts up with so much, that its owner often forgets to give it the care it demands, and the result is a body that repels some day in order to attract attention to its needs. Therefore the doctors in the future will be those who keep the body well instead of treating it when it gets ill. Medicine is a great science, but the doctor himself can be so much greater than his pills and plasters. The science of preventive medicine, so far as it relates to the individual, is concerned with the normal healthy development of the body, the care and usage it should receive, the conservation of its vital organs, its fortification against disease, its mental and physical efficiency, and in the prolongation of its span of life.

As related to the community, the science pertains to the eradication and control of disease, and removing the condition causing them. Its aim, therefore, is primarily preventive rather than curative. It deals with the individual, not as an individual alone, but as a member of the community. It regards the community as the real patient whose health and physical welfare must be safeguarded. The work is conducted in the name of the community and for its direct benefit.

The mind of man has never been dominated by an unquenchable desire, an inherent tendency, toward continuous progress in life.

Our twentieth century age is distinctively one which clearly demonstrated the truth of man's advancement in progressive usefulness to his fellow man. This age of gradually increasing light, of awakened and intellectual qualities, with constant progress in every department of life's activities, seems to prove the fact that every era of history is marked by the many changes and development of human thought.

But there was a time when man seemed to be satisfied with things as they were, and they were simply astounded at the very idea of a change, but today in this twentieth century men are ready for any change as soon as their minds grasp the newer and better conditions of life.

But however much we may proclaim our independence of thought and action, however much we may tirelessly shake the strongly welded shackles of imprisoned conservative ideas and fixed ideals, we still are confronted with indisputable facts that, after all, the successful progress in

life has been determinedly accomplished, we stand today surrounded and influenced by the characteristic essence of the conservative thought of the years. And it is equally true that we must get accustomed to the truth that the mind, with its ever widening experiences, must ever change the horizon of its belief. The belief in the efficiency of drugs as curative agents is daily undergoing a remarkable change.

It is almost self-evident that science seeks to know what is, and what might, or should be. But notwithstanding the tremendous accomplishments of science in every field of endeavor, we still feel and grievously experience the effect of darkness—a darkness which carries with it, in victory or defeat, the awful issues of life and death. Medical adaptness in diagnosis of the diseases assailing mankind has not yet reached the point of infallibility. In many respects, the medical practitioner of the twentieth century is not unlike him of the first, therefore we are, at once, brought to a full realization of the undeniable truth that, in both aim and fact, the practice of medicine has become rapidly and effectively preventive.

By preventive medicine we mean that branch of the healing art which treats of the medicinal, prophylactic, and hygienic means and agents employed for the preservation of health.

Prophylactic treatment of disease consists of the intentional inoculation of a patient with the virus of a disease in order to cause a mild type of that disease, which will secure immunity against subsequent attacks. Both the twentieth century patient and his physician realize that today prophylaxis is the very best method of medical treatment.

All along the lines of therapeutic investigation there has been noteworthy advance, and today there is no phase of medical study which does not bear witness to the commendable spirit of accurate and exhaustive research, which characterizes our age.

New drugs and therapeutic agents are being sought with intense eagerness, found where least expected, and applied with skillful observation. Every substance, organic or inorganic, that may possibly influence the animal economy, for good or ill, is being tested by manifold timed and guarded experience upon animals and finally upon human beings, until its powers for cure or otherwise, are de-

termined with exact precision of torsion balance.

But notwithstanding that preventive medicine is fast becoming a veritable god-send to diseased humanity mankind is still in accordance with the rules and ethics of olden times.

Preventive medicine, if practiced, enables a man to reach a ripe old age with little suffering and loss of valuable time.

The day has arrived when scientific application of medicine has a strong hold upon the minds of physicians. But the day will never come when physicians will become so efficiently intelligent and so thoroughly drilled in diagnostic technique as to be able to detect disease in all its intricate and tortuous ramifications through the human body. It will always be necessary to take something for granted. Great and lasting good has also been accomplished by the passage and exact enforcement of beneficent laws, which were fathered by physicians and which compel an indifferent public to strictly observe and practice the rules and regulations of effective hygiene.

The physician who is deeply interested in the constant progress of preventive medicine is endeavoring continually to unfold and expand the beneficent results of its effective application in the treatment of disease. He fully realizes that he must be an active, telling force in the advancement and promulgation of the life sustaining principles of preventive medicine, for it is becoming more apparent from day to day that men and women have not the physical, vital strength that they should possess. The sensible employment of preventive principles in sanitation and effective hygiene has caused the cutting down of infant mortality, and rooting out of children's disease, but man's endurance, after middle life, is decreasing. They fail, seemingly, to grasp the fact that proper outdoor exercise is a great boon to perfect health. This is true of the professional man's life.

In his untiring efforts in behalf of the diseased people of his community the faithful physician has done much good. But when this same physician contemplates the effects of the seemingly malicious, stupid, non-recognition of, and the opposition to, the true worth of modern scientific preventive medicine, the hectoring and bullying of himself and colleagues in all their aims for the good of the public,



the cordial support of legislation in the furtherance of the sordid schemes of cranks and quack-alls which are, indeed, a social menace and a common danger, he realizes that preventive medicine still has a brave struggle ahead, but it will, eventually, be triumphant if it has but a tithe of the sympathy and help it justly deserves. The magnificent battle waged by the twentieth century physicians, in behalf of their noble, sacrificing purposes to lessen the pain and suffering of mankind and thus prolong the years of useful life, is quite similar, in some respects, to the battle fought by the discoverers of the means of preventive medicine in the years of long ago. Although the physician of today is not forced to deny or recant and notwithstanding the fact that he is not compelled to suffer the agonizing pain caused by the life destroying flames of the stake, it is, nevertheless, true that every physician, in his time, was invariably of the unpopular side, courageously fighting the unceasing battle of new and unwelcome truth inherited and acquired ignorance, detestable superstition and unpromising prejudice. The millennium of medicine will be fully realized when the medical practitioner, who has lived and moved in the foggy atmosphere of clouded glory, reaches that point of comprehension which enables him to see, with the windows of the mind open, that it is far better to be conscientiously honest and sincere in the treatment of the sick.

But notwithstanding his many grievous faults and shortcomings the faithful medical practitioner may always be delightfully consoled by the happy recollection of the thought that, after all, no grander band of men ever graced the luminous galaxy of professional glory than who continually shine as brilliant jewels in the crown of the Roman God of medicine.

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#### YEAST ADVERTISING

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In the Journal of the American Medical Association for January 7, 1933, page 59, there appears a letter from the Vienna Medical Faculty denying that any members of the faculty have given testimonials as to the alleged therapeutic powers of yeast. The medical faculty goes on to state that statements have been used in American illustrated and other magazines to the effect that they have issued such favorable statements. They wish by this to emphatically deny that any statement has ever been made.

#### VERTIGO\*

ROBT. L. GEE, M.D.  
HUGO

Vertigo is a symptom in the symptomatology of a large number of diseases with which we come in contact. I have had patients with vertigo the clinical significance of which I did not at all understand. We are prone to speak in an indefinite way of a refractive vertigo; of a stomach vertigo, of a vertigo from Bright's disease, without even thinking for a moment of the real mechanism of its production.

For a long time it has been generally accepted that vertigo is due to a disturbance of the vestibular apparatus. Fecal infections, gastro-intestinal, kidney or any other form of toxemia can produce vertigo only if the toxemias affect the vestibular apparatus.

Therefore we should regard every case of vertigo as a disturbance of the vestibular apparatus. Unquestionably the slightest irritation of the vestibular end organs produces a disturbed equilibration. The vestibular apparatus includes the vestibular portion of the middle ear, the vestibular portion of the eighth nerve, and the vestibular intracranial pathways and termini.

If with the vertigo there are any outstanding symptoms of causative diseases present, these will, of course be of material help to us in arriving at a solution of an otherwise mystery. The causes may be divided into four rough sections. Intracranial diseases with its many problems for the neurologists and the general or brain surgeon. Ear diseases with its many direct causative factors, eye diseases which are comparatively few, and then comes the toxemias, the systemic, and metabolic disturbances affecting the labyrinth of the ear.

#### METABOLIC DISTURBANCES AFFECTING THE LABYRINTH OF THE EAR

Quite naturally, as you would expect, the chief interest of this symptom to me is centered on the disturbances of the ear and the eye which are known to be responsible for this symptom in many patients. If a patient with paralysis or an extraocular muscle looks in the direction of the paralyzed muscle there is an ap-

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\*Read before the Southeastern Oklahoma Medical Association, Roebuck Lake, Hugo, Oklahoma, on October 20, 1932.

parent rapid movement of objects in the opposite direction. If the eyes are closed, however, the symptom disappears. In this simple manner we eliminate other causes. If the eye muscles are not at fault we use the ophthalmoscope to determine if a choked disc or retinal or other lesions are present which might throw some light on the etiology of the vertigo.

In chronic suppuration of the middle ear, vertigo becomes of great diagnostic and prognostic importance as indicating the necessity for surgery. However, in this condition, one should distinguish between irritation of or extension to the labyrinth and extension of the suppuration to the brain. For a long time the labyrinth of the ear has been recognized as the chief organ controlling equilibrium. Waves of sensation, subconscious in part at least, are constantly proceeding from the semi-circular canals and the vestibule, whence some pass through connecting neurons to the cortex of the cerebrum, and others through the principal nuclei in the bulb and Deiter's nucleus, through the cerebellum into the motor cells of the anterior horns of the cord. When these sensations originate, and are distributed in all these directions, in a normal manner their subconscious interpretation results in equilibrium or a sense of equilibrium. But when the impulses at their origin on one side in the semi-circular canals and the vestibule are unduly stimulated or retarded, at once the sense of equilibrium is upset and vertigo results. Labyrinthine vertigo is always rotary. Changes of the pressure of the intra-labyrinthine fluid and changes in the circulation of the blood in the labyrinthine vessels causes vertigo, and it is easy to understand how very many tympanic disorders can cause these changes. Labyrinthine disease can occur without pre-existing disease of any other part of the ear, as in syphilis or leukemia. Local disease of the labyrinth produces vertigo, yet it is equally true that any interference in the tracts through which impulses from the labyrinth pass may also produce vertigo. Lesions in the cerebellum and its peduncles, lesions in the medula, and in the pons, and lesions of the eighth nerve may affect these pathways. As the auditory nerve passes through the pons and approaches the restiform body

it divides, the acoustic bundle passing to the outer side and the vestibular bundle to the inner side of this body. Thus a lesion in this region might involve vestibular portion, producing vertigo and nystagmus, without involving the acoustic portion and the function of audition. Lesions of the cerebellum through which most of the vestibular impulses pass to the muscular system of the body are most likely to produce inco-ordination, vertigo, nystagmus and past pointing of a more persistent type than the vertigo of labyrinthine origin. Instead of a direct involvement of these tracts, intracranial disease, by inducing intracranial hypertension, may be the cause. Tumors, hemorrhage, abscesses and meningitis are some of the conditions that may interfere with the tracts or cause hypertension.

In addition to cases of vertigo occurring in demonstrable lesions affecting directly the vestibular apparatus or the neurons distributing its impulses, there is a large number of other cases in which no local lesion can be identified. These are the so-called cases of functional vertigo. They may be mild or severe. Lesions far remote from the ear and many systemic conditions are able to affect the labyrinth. The mode of action may be through the reflexes or due to toxins or circulatory disturbances. If the vertigo is of the reflex type, as in tubal, ovarian or abdominal disease it is through the sympathetic nervous system affecting the vasomotor supply of one labyrinth or its connections on one side more than the other. Vertigo in cardiovascular disease is due to insufficiency of the blood supply to the brain and labyrinth. These are such diseases as aortic valve lesions, heart block, thoracic aneurysms. Low blood pressure will produce vertigo. High blood pressure will do the same when the pressure is suddenly lowered.

These changes in the labyrinth are caused by changes in pressure of the intracranial contents on the saccus endolymphaticus. Toxemia causes vertigo through irritation by the poison of the nerve endings in the labyrinth and vestibule. The nerve elements within the labyrinth, like the retina of the eye, are very delicate and are easily disturbed of influences.



## EMPHYEMA OF THE PLEURAL CAVITY

P. P. NESBITT, M.D.  
TULSA

The collection of pus in the pleural cavity is due in a very great majority of cases to extension from pneumonia processes in the lung. The relatively small number of cases not caused by pneumonia may arise from a wide variety of conditions, some of which are: (1) Penetrating wounds, either through the entire chest wall or from fragments of fractured ribs. (2) Infective processes of the chest walls. (3) Infective processes other than pneumonia of the lungs, as tuberculosis or lung abscess. (4) Extension from infections below the diaphragm, as perinephritic abscess or sub-phrenic abscess. (5) Suppurating glands in the mediastinum or other parts of the chest. (6) Extension through the lymph channels, as from boils or carbuncles on the neck. (7) Possibly through the blood stream when there is a pre-existing lesion of the pleura.

All of the pus producing organisms are found in empyema. Where the condition follows lobar pneumonia the pneumococcus is nearly always the causing organism. When it is caused by the bronchopneumonia of influenza the streptococcus is found in nearly every case. Aside from these the staphylococcus and colon bacillus are the most commonly found organisms.

The method of development of empyema from pneumonia is usually a direct invasion of the pleura by the organisms from the consolidated lung. Where it is caused by other conditions as abscess or suppurating glands it may be by extension of the inflammatory process, by rupture of pus into the pleural cavity or the infection may be carried by the lymphatics.

The fluid forming in the pleural cavity if caused by the pneumococcus, staphylococcus or the colon bacillus is frankly purulent from the beginning. If caused by the streptococcus it is fairly clear at first, gradually becoming more purulent. If caused by the bacillus tuberculosis it remains clear unless a mixed infection develops.

Symptoms are at first the pain of pleural irritation which is relieved when enough fluid forms to separate the inflamed surfaces. Irregular chills with fever followed by sharp remissions and profuse sweating.

Cough is usually but not always present. Appetite poor. Patient usually weak and listless. Dyspnoea is present if the collection of fluid is large.

Diagnosis is made from the history, by physical examination, X-ray examination, and the aspirating needle. In cases of pneumonia or other illness when convalescence is unduly prolonged or when irregular chills and fever develop a careful examination of the chest should be made. If there is a considerable amount of fluid percussion over this area shows a characteristic flatness and on auscultation breath sounds are distant or absent. There is a lagging or limitation of motion in breathing on the affected side. There is no fullness or bulging between the ribs except in neglected cases with a very large amount of fluid present. Blood examination shows a variable amount of leucocytosis present, the count usually being rather high.

X-ray examination should be made when possible with patient in the standing or sitting position. More information can often be obtained by a fluoroscopic examination than from a film. By turning in different positions a pretty definite idea of the location of the fluid can usually be gained, and if a fluid-level can be seen we know definitely that it is fluid and not a consolidated lung or thickened pleura that causes the increased density. In all acute cases where fluid has been located, or strongly suspected, in the pleural cavity, aspiration should be done and the fluid examined bacteriologically. If a large amount is present a large part or even all that is possible should be removed by aspiration for relief of acute symptoms.

Prognosis in empyema depends on a number of factors. Age of patient, children as a rule respond to treatment better than adults. Condition of patient at time of operation—many of them are in a moribund condition due to the severity of the disease of which the empyema is a complication, or to the overwhelming severity of the empyema process itself. The anesthetic used, the virulence and location of the pus and the extent and location of the drainage operation, nursing and dietetic facilities available, co-operation of the patient.

The treatment of fluid in the pleural cavity is governed by the bacterial findings, the amount of fluid, and the condition of the patient. First, we want to emphasize that a patient having only sterile

fluid in the chest, whether it be blood or an exudate, should never be subjected to open operation. If the collection is large enough to embarrass respiration it should be removed by aspiration. The same holds good for tubercular infection unless a mixed infection develops. Even then it should be treated by aspiration as long as possible and an open drainage done only as a last resort.

A streptococcus process should not be drained by open operation until the fluid becomes frankly purulent. The reason for this is that the adhesions limiting the process are so slight that if air is admitted to the pleural cavity the lung will collapse with an extension of the infection, "flapping" of the mediastinum and of the heart if it is the left side of the chest involved. The fluid should be aspirated as often as necessary to prevent respiratory embarrassment and extension by pressure. By the time the fluid becomes purulent the adhesions are strong enough to hold and the chest can be opened safely.

Generally speaking, a pleural cavity containing pus caused by the pneumococcus, streptococcus, or colon bacillus should be opened and drained as soon after the diagnosis is made as is possible. However there are exceptions to this rule. In some cases where the pneumococcus is the causative factor the bacteria have either largely lost their virulence or the body has developed an immunity sufficient to hold the process in check. Such cases may be cured by aspiration alone, or even without it. In my opinion many of the cases diagnosed as delayed resolution of pneumonia are really empyemas of this type. In cases where there is a massive empyema and the patient is in extremis it may be advisable to remove a part of the pus by aspiration and wait a few hours in hope that the patient's condition may be improved at the time of operation. However all such cases should be operated, for it is surprising how some of these apparently moribund cases will rally after operation.

The question of the kind of operation for providing drainage resolves into whether a rib resection should be done or not. In small children, in most types of infection, and in adults with a pneumococcus infection and whose ribs are so close at the desired point that an adequate sized tube cannot be introduced between the ribs, rib resection is the operation of choice. Also where it is desired to open the chest

wall near the insertion of the diaphragm it is safer to do a rib resection.

Drainage without rib resection is preferable in most adults in any kind of infection and in children with a streptococcus infection if it is possible to get adequate drainage.

The location of the drainage operation should be at the most dependent part of the abscess cavity when the patient is in the erect position, for the patient is practically always up and about before drainage stops.

*Anesthetic.*—For children it is usually necessary to give a general anesthetic, ethylene or nitrous oxide being preferable to chloroform or ether. For adults the operation can be done with local anesthesia.

Various types of drainage tubes are used but a soft rubber tube of the desired size is preferable in most cases. In cases of pneumococcus infection with large amount of fibrinous deposits in the cavity, two moderate sized tubes placed side by side are preferable to one large tube.

Postoperative treatment consists of keeping drainage established, forced feeding, getting patient out of bed a part of the time as soon as possible, and exercises to expand the contracted lung to close the abscess cavity.

In order to keep drainage established it may be necessary to wash the cavity with some liquid that will dissolve the fibrinous deposits. Dakin's solution is best for this where there is no bronchial fistula.

Blowing against resistance is the best exercise for expanding the lung. It should be begun early and practiced systematically several times daily.

#### —o— INTERSTITIAL KERATITIS

In a check-up examination of sixty-seven persons five years after all active symptoms of interstitial keratitis had subsided under intensive antisyphilitic treatment, Maude Carvill, Boston (Journal A. M. A., June 6, 1931) noted that in twenty-three cases the vision had improved, in thirty-two it had not changed, in nine it was not as good, and in three data were not available. In five of the nine cases in which the vision had failed there were other complications such as cataract, choroidal changes in the macula, glaucoma secondary to marked chorioretinitis of diabetes, exophthalmic goiter, and phlyctenular keratitis. In none of these sixty-seven cases has there been a recurrence of interstitial keratitis during the five years. One patient, however, had a syphilitic iritis; one had a cataract; one an acute glaucoma secondary to a severe diabetic chorioretinitis, and one had phlyctenular keratitis.



## SOME PROCTOLOGIC PROBLEMS\*

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Such progress as has been made during the past decade by those working in the orthodox proctologic field has resulted largely from an honest attempt on the part of proctologists everywhere to shoulder certain technical responsibilities—the necessity for accurate instrumental diagnosis, proper surgical procedures and painstaking after-management.

Any number of complex and interesting problems remain for future adjustment by those seriously concerned with the work of this field and it is not unreasonable to assume that the competence and good judgment with which such problems are approached will index in large degree our maturity. The present discussion comprises a brief survey of three proctologic subjects which present unsettled phases at present under friendly dispute and these three examples—the place of injection in hemorrhoid therapy, the precancerous role of benign anal and rectal lesions and the essential use of surgery in the presence of chronic ulcerative colitis—will perhaps serve as illustrations of unsolved proctologic questions and point out the wide divergence of present opinion where even the most common intestinal complaints are concerned.

## INJECTION OF HEMORRHOIDS

Because of its origin the injection treatment of piles has in this country remained a subject difficult to discuss in ethical circles without acrimony and irritation, a state of mind which has subordinated calm consideration of the comparative merits of agents suggested and of the types of varicosity possibly suitable for this therapy to controversy concerning the method in general.

Proctologists feel that the method has had an unfortunate tendency to carry with it certain stigmas of its unethical origin—universality of application, guarantee of cure and secrecy of formula.

But many orthodox practitioners realize with proper solutions as sclerosing agents the method has definite usefulness, that it is often curative in first stage piles

which present painless bleeding as the single symptom, that it occasionally cures and usually relieves second stage piles (slightly prolapsing tumors) and that even in more advanced cases where permanent relief cannot be expected and where complications often contraindicate the technique, hemorrhage may be temporarily controlled by its judicious and careful use.

For this reason investigations similar to those constantly reported in connection with varicose vein therapy for example which aid the unprejudiced practitioner to determine the most effective and least perilous solutions would appear opportune.

If I have properly interpreted the trend of injection therapy as applied to the rectum the earlier strong solutions of phenol in carriers of water, glycerine or oil have been largely abandoned possibly because of the incidence of slough as a complication.

During the past decade two types of solution have been popular, quinine urea hydrochloride as advocated by Terrell of Richmond, and weak phenol mixtures in oil vehicles administered in large doses.

Submucosal tumefaction became so common an observation in the proctoscopy of individuals previously injected in a number of cities and villages of Texas that biopsies were performed in individuals whose tumefaction had resulted in rectal occlusion and it was determined that the tissue present was not as had been previously believed a pure fibrosis but a foreign body granuloma from non-absorbed oil, in other words an eleoma.

To confirm this impression a clinical and pathological survey was recently made by Dr. Stuart Wallace and myself based on a series of twenty rectal occlusions and fifteen individuals without stricture, all giving a history of previous injections of unknown solutions. This series of thirty-five clinical cases were injected by some sixteen different physicians in eleven Texas communities.

In addition, twenty-six experimental injections were made in hemorrhoids or under the rectal mucosa of human subjects, using three oils with and without phenol fortification. Hemorrhoids previously injected with quinine urea hydrochloride, non-injected hemorrhoids, and inflammatory strictures were used as controls.

These cases present at times a diag-

\*Read before the Muskogee County Medical Society on Monday, February 27th, 1933.

nostic puzzle, a situation even more probable in communities where the phenomenon is less frequent and the clinician and pathologist unfamiliar with the gross and microscopic picture. The dense fixed tissue characteristic of our clinical and experimental eleomas is not dissimilar to sarcoma, tuberculosis and lues and the section itself presents features suggestive of the last two.

Our final conclusion was that the retention of oil and consequent fibrosis is in our community the chief etiological agent responsible for stricture in previously injected individuals and that the same phenomenon is apparently responsible for lump formation in the rectum.

Regardless of the acceptance of our conclusions, it is felt that a continuation of similar studies, without prejudice, may clarify the status of this form of therapy.

#### ANAL CANCER

The chronic irritation theory has been generally adopted in connection with the origin of malignancy. The application of this theory to rectal cancer exclusive of the anal canal has also been generally accepted in connection with pre-existing adenomas and chronic colitis.

If it is true that unsound tissue in the anal canal, resulting from the long-continued existence of various forms of common anal pathology with infection and irritation, have the same provocative reaction in susceptible subjects as do similar tissues in other parts of the body, it becomes an unfortunate fact that the weight of written authority has up to this time discouraged the very logical resulting conclusion.

Ewing, (who seems to base his statement largely on an expression made by Kraske some years ago) has been widely quoted to the effect that a tissue predisposition appears definitely only in those cases arising on multiple polyposis, and there is no satisfactory evidence that "cancer develops in tissue altered by hemorrhoids, fistulae or cicatrices." Pennington rejected the entire irritation theory and believed hemorrhoids when present were a mere coincidence. Lockhart-Mumery ardently supports the adenomata theory in the rectum, grants the occasional occurrence of cancer in fistulous tracts but doubts the etiological significance of other benign anal pathology.

A review of the literature since 1915

reveals that eighteen specific instances in which malignancy has developed in benign anal lesions have been reported by ten observers, in addition to a number of vague references to cases observed by others. The preceding lesion is given as piles in seven instances; seven fistulae resulting in cancer, three cases of pavement-celled epithelioma from leucoplakia and one case of epithelioma in an imperforate rectum have also been reported.

In my opinion this group of cases is a tremendously inadequate representation of the true picture and it is suggested that two factors are responsible. Such a logical sequence is not thought worthy of special record by the casual observer; or in instances where cancer has overgrown the original benign lesion the significance of past symptoms is over-shadowed by the present tragedy of malignancy.

I have previously reported seven cases in which fistula had been present before the discovery of anal cancer for periods varying from one to fifteen years.

Four cases were seen giving a history of bleeding and protruding hemorrhoids for periods varying from ten to thirty years. In one a squamous celled malignant ulcer was found lying between two ancient piles and extending upward from its origin at the anorectal (dentate line) in another a firm mass was found to contain epithelial cancer, in the other two cases the hemorrhoids had been completely replaced by malignant tissue, adenocarcinoma in one and epithelioma in another.

It is suggested that a more general investigation of the prior history and local findings will multiply the number of similar reports.

Admitting the possibility of coincidence in some cases, it is believed that there is satisfactory evidence that anal cancer may develop in tissue altered by hemorrhoids, fistula or cicatrices.

#### ESSENTIAL SURGERY IN CHRONIC ULCERATIVE COLITIS

The management of a widespread, disabling, often fatal disease, chronic ulcerative colitis, has been in the last ten years almost entirely relegated to the realm of medical treatment. Two factors conspired to bring this about. The mortality following operative interference in the past had been unusually high, due to the fact that surgeons did not understand the extreme permeability of a bowel carrying this in-



fection and attempted to explore all cases, peritonitis frequently resulted from trauma, and to the fact that the preoperative and post operative preparation was not properly emphasized. When the announcement was made that the disease was due to specific organisms and that vaccines and sera made from these organisms would cure the condition, the surgeon was glad to relinquish his attempts to combat the situation by radical means, and for ten years has waited patiently to see the outcome of purely medical measures.

Four definite etiological agents have been postulated by different groups of observers, and each group seems equally convinced of the adequateness of their explanation and the complete efficacy of measures based on it. One group has claimed that all cases are due to amebae. In England and Canada the theory that the disease is related to bacillary dysentery has gained foothold, anti-dysentery serum being used. It has also been postulated that chronic ulcerative colitis was primarily due to an avitaminosis.

Unquestionably the most popular theory in this country is that first enunciated by Bagen in 1924, that the disease is the result of infection of the colon with a specific streptococcus and that vaccines and sera from this organism are largely curative.

It would appear that regardless of the final outcome of the discussion concerning the specificity of any etiological agent, and granting the value of recent discoveries, the result of treatment by present methods are nevertheless unsatisfactory. Surgical measures which have been in a large part held in abeyance have a wide field of usefulness which should be utilized. Such surgical procedures, which can be held to a lower mortality by proper application of new information concerning the pathology present will be useful in three ways; the cure of disease, to cure the patient, if not the disease, to eradicate foci of infection in the zone of origin (the anal canal) as well as in distant zones.

Patients entering Baylor University Hospital with this complaint over a recent ten year period had a hospital mortality of 18.4 per cent and it was startling to note that only one patient who died had any attempt to alleviate the condition surgically before his demise.

While prevailing treatment in this ten

year group involved chiefly medical measures, nineteen per cent had some surgical procedure during their stay. The procedures covered a wide range—colostomy, ileostomy, fistulectomy, hemorrhoidectomy, cecostomy, etc., and it is at least of interest that there was with a single exception no mortality as a result, nor was there a reported case which did not show some improvement.

Recently the opinions of a group of surgeons most likely to see a volume of these cases was sought by personal communication to supplement opinions found in the literature and it was found that present opinion here and in England may be grouped under two divergent schools—first a definitely conservative group who regard surgery as a last resort and second those who believe that operative measures should be much more frequently utilized than is now customary. But, the “conservative” group as a rule favor only the most radical type of surgery in cases selected for surgery and the “radical” exponents of surgical relief are often strangely conservative in the procedures they believe will prove helpful in non-moribund patients.

In the first group the opinions of Drs. Rankin of Lexington, Lynch of New York, Fansler of Minneapolis, will be illustrative. Dr. Fred Rankin wrote (in part): “Ileostomy has been done in the past two years in three to four per cent of cases coming to the Mayo Clinic. I have never seen any advantage in doing a cecostomy or appendicostomy. We always do an ileostomy.”

Dr. Jerome Lynch wrote: “In chronic cases where infection has extended into the small bowel, ileostomy has given complete recovery. In the past appendicostomy gave very satisfactory results, but I have found surgery less frequently indicated since 1917. About three per cent of the cases require surgical intervention.”

Dr. Fansler wrote: “Simple ileostomy with division is the only procedure justifiable and even with this the mortality is about fifty per cent.”

From the group advocating the application of surgery to a larger number of cases, favoring as a rule simpler procedures, the opinion of Mr. Lockhart-Mumery and Sir Charles Gordon Watson of London, Dr. Louis Hirschman of Detroit, Dr. Dan Jones of Boston and Dr. P. H. T.

Thorlakson of Winnipeg will be summarized.

Both Mummery and Watson in a symposium before the Royal Society of Medicine in March, 1931, favored appendicostomy as a routine step except in mild cases.

Dr. Hirschman wrote: "It is far better to perform a cecostomy or ileostomy on a patient who might possibly have been materially improved by non-surgical measures than wait too long. The majority of cases coming under my observation consult me after a long period of non-surgical care, so fully seventy-five per cent are advised to have surgical intervention."

Dr. Jones wrote (in part): "I do not regard appendicostomy as sufficiently helpful. I believe an ileostomy should be done in a few acute cases, perhaps rarely in a fulminating case and always in a chronic case which is steadily going down hill. I operate upon nearly seventy-five per cent of the cases I have been asked to see."

Thorlakson recently wrote (December International Clinics): "In cases that resist all other measures we feel that cecostomy is a useful procedure. The tube must be left in situ for an average of one year."

It is apparent that there is a variance of opinion as to just what procedure should be done if surgical intervention is contemplated. My own judgment is that the mild but chronic case in which vaccines, sera, diet and rest fail to bring about remission promptly, or those in which recurrence occurs, an appendicostomy or cecostomy is indicated. It seems reasonable to assume that this is the type of case which is not now submitted to surgical judgment, and it is possible that it is for this reason that some of the authorities quoted rely entirely on ileostomy.

In fulminating cases, where intervention is necessary to save life, or in any case complicated by polyposis, malignancy, hemorrhage, etc., a transverse ileostomy seems definitely desirable.

Observance of several tremendously important surgical principles, which have been brought out by the intensive study of this condition has been given in recent years, should do much to keep the mortality within proper limits. The first is the use of one or more preliminary transfusions of blood, coupled with a smooth low residue diet and fluids by clysis. The

second is complete avoidance of trauma to the colon in the laparotomy, best accomplished by the use of spinal anesthesia for relaxation, careful handling and no exploration. The third is prevention of soiling of the wound until it has had opportunity to heal firmly and the appendicostomy or cecostomy is best left closed for a period of five days to one week after the laparotomy.

710 Medical Arts Building.

## GOLF, AND INFANT FEEDING

It is possible to play over the entire course with a single club and bring in a fair score. But playing with only one club is a handicap. The best scores are made when the player carefully studies each shot, determining in advance how he is going to make it, then selects from his bag the particular club best adapted to execute that shot.

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We believe this a more intelligent and helpful service than to attempt to make one "baby food" to which the baby must be adapted.

## BASIC CONSIDERATIONS IN MINORITY REPORT OF COMMITTEE ON COSTS OF MEDICAL CARE

Alphonse M. Schwitalla, St. Louis (Journal A. M. A., March 25, 1933), states that the minority report of the Committee on Costs of Medical Care did not condemn wholesale and in toto the recommendations of the majority. The minority expressly states that, on many points discussed in the majority report, the nine members who signed the minority report are in complete agreement with the larger group. The minority says: "We are in full and hearty accord with the Majority in its recommendations for 'The Strengthening of Public Health Services' and 'Basic Educational Improvements,' and we agree to some extent with the pronouncements of the Committee in respect to coordination of medical services. Some of the recommendations for coordination of medical services and for basic improvements in medical education are immediately practicable," and it considers itself "in sympathy with the recommendations of the majority which deal with the better training of specialists and their proper control." The author also discusses medicine as a self-determining profession, the personal relationship between the patient and the physician, the group purchase of medical service and the constructive recommendations of the minority report. He concludes that the majority report, to his mind, has done its greatest service to medicine by arousing the interest of the medical man in the economic and social problems implied in medical practice. The minority report has done its greatest service to medicine by restating and reemphasizing those basic principles of medical practice which must be the foundation of all development in medicine, not only of scientific development but also of social and economic progress in the practice of medicine.



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### EDITORIAL

#### WHAT TO DO AND WHAT NOT TO DO

This matter is one dealing with the very simplest fundamentals of certain phases of our annual session, but, regardless of that we find these fundamentals neglected and ignored year after year, without regard to the annual suggestions to do otherwise. We refer to papers, preservation and preparation.

First: Every paper read at the annual session is the *property* of the association and its journal, therefore they should not be carried away from the meeting for the "correction of errors." These errors, if they exist, should be carefully corrected in advance of the meeting, and the paper

entirely rewritten and prepared *exactly as you wish it to appear* in print in the future.

Second: The paper should have (a) a title, one fitting to the text. Ambiguous titles are worthless. The title should attempt to convey the idea the writer wishes to convey to the reader; (b) full name and address of the author; (c) time, place and section in which the paper is to be read. All papers should be *double spaced* (printers utterly despise to handle single-typed papers. They are certainly more difficult to set up and are more liable to errors than otherwise; (d) You will be mailed galley proofs of your article, and with it quotations as to price of reprints. This matter should be promptly read, corrected and *returned to the printer, not the editor of the Journal*. Please do not commit the rather common negligence or error of waiting two or three months after the paper has been published in the Journal. The type has long since been melted and therefore reprints cannot be had, though our printer is an accommodating gentleman, and often resets the article in order that the negligent author may obtain a few reprints, which at the proper time could have been obtained at relatively low cost. The Journal and the association has nothing to do with the setting up and sending out of these reprints. The printer does all this on his own initiative, and at cost, no attempt being made to make any profit out of the transaction.

Lastly: Just pick up your paper, read it from the beginning, see if it is in the order above suggested, and if you want it to appear in print as you have it written. Some day the editor is going to play a joke on some set of writers by setting up and printing the articles exactly as they are received. Then we expect to get a "cussing."

You are further advised that the papers that are errorless, or practically so, come from the hands of the busiest men in the state. It would seem that if these men, known to be busy from morn to night can find time to write their papers in immaculate manner, the physician finding time hanging upon his hands should do equally well, but they do not. The moral to all this may be found in a few moments reflection. Success and accuracy seem to run hand in hand.

By all means leave your paper with the section officers.

## DO THE RICH GET THE BEST MEDICAL SERVICE?

Some years ago one of our great authorities on matters medical and surgical, in substance said, "Those who get the best (it is inferred he meant to say modern and scientific) medical service, are the very rich, or the poor." This seemed to be accepted as a fact at the time, the reason being given that the rich were able to employ the best service procurable, while the same type of service was rendered the poor by the identical men who bore great reputation for ability and connected with the various services in hospitals to which the very poor were allocated after a general physical examination plus all the aid to be obtained by X-rays, laboratory and allied service. It is well known that once "the very poor" are installed in a modern hospital for treatment, no distinction or favoritism is shown by reason of their lack of finances—they get everything, regardless of cost, time and energy, the findings of the case seem to indicate it needs. Now, after recalling a few cases as examples, we have begun to doubt but what the very poor actually get the best of the bloated rich. The latter suffer this disadvantage — they employ whom they please, and often the selection is either poor or they come to a decision too late for any surgeon to have much chance to do them any good, regardless of ability. On the other hand the poor follow, more or less, inescapable routine, found by experience to be the course of action best calculated to produce the best results.

The writer reads, with regularity and persistency, the weekly known as *Time*. This is ably edited, it gets and keeps its news up to the last minute and, as a rule, makes few, if any medical "bulls." It devotes a section to the goings and happenings of the great and rich, the people in the public eye, whatever their field of activity. That means from Al Capone and his leading henchmen to Mr. Hoover, Mr. Roosevelt, or King George.

I have been struck, during the last few years, to note the number of highly successful men who have died either immediately after or soon following some surgical operation, appendicitis naturally leading the list, merely because it is the commonest of all surgical conditions of the abdomen. After this the conditions vary into various diseases, gall-bladder diseases, perforations, these followed by a list of

freakish possibilities. The point is—these men seem to be dying from rather simple conditions and at too early an age in life. Of course it must not be forgotten—every observant physician has noted it—the fact that often this class of patients are obdurate and most difficult to handle. They have made huge successes of their own chosen specialties, therefore they are somewhat spoiled. Why should they not be allowed to ponder from a day to many over the most potent and practical advice given them by highly skillful (in their line) of physicians and surgeons. The result is that too often the surgeon receives for operation, a man already practically dead—we must not forget that success has given these men an idea that their decisions are worthwhile in all affairs—we cannot forget the great as well as laughable fiasco brought about by Henry Ford, who leased the good ship King Oscar II and with an associated lot of ill fitted cronies badly crossed the ocean to end the war and "get the boys out of the trenches and home by Christmas.", Well! Why not? He had made more automobiles than any other man—his success, financially, had been tremendous—why shouldn't he end a war? Well, he soon learned to the contrary. It is said he never even got a glimpse of a single member of the Austro-German High Command, so, the King Oscar came back with its incredible list of busy-bodies. But reverting to the list of well-knowns who succumbed to, what at first was a very simple surgical condition, Valentino, Tex Rickard, Ritchie (of Toronto, who died on the table from this, at first, simple thing, appendicitis), who was able to control rubber-set brushes, tough-foot fly paper, Glover's mange cure, salt-water taffy, Eno's fruit salt, Scott's Emulsion, etc., (his 1931 earnings were \$944,000) yet he died on an operating table from a condition we consider simplicity itself. We hardly doubt that had he been an object of charity a few hours after his first nausea and abdominal cramps, his appendix would have been out, and today he would be sitting up, and from an easy rocker, dictating to a corps of secretaries, the multitudinous skeins and ramifications of a complicated business.

No, we conclude that often the great and rich are decidedly worse off than the ditch-digger or ordinary laborer, unable to pay even a week's hospital bill. Personally we know some very rich men in Oklahoma who are very poorly supplied with medical services—some of them are



advised by osteopaths, chiropractors, etc.,—none of whom appreciate the decisive role played by time, in the face of certain conditions. Every issue of *Time* as a rule, is a replica of its predecessor in recording useless tragedy among those best able, financially, to avoid such useless end. Apparently the very poor have the best of it. There is only one exception, and that is in the case of the poor, depending upon an equally poor (mentally) medical advisor, who is unable to make up his mind that "this is a surgical case," an acute one, demanding immediate and proper care from a man able to remove the danger, usually in a few minutes.

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### PREOPERATIVE AND POSTOPERATIVE PROTECTION BY USE OF INTRAVENOUS METHODS

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All good surgeons thoroughly realize the great value of pre and postoperative intravenous measures to tide over, what might otherwise be a very serious, if not fatal case, if the case is not properly protected by some of the various intravenous methods used to tide over the patient in the face of a grave crisis. We say "some" (measures) with certain and rather positive reservations. Personally we think the best and at the same time the safest, therefore the one to be used, is the *direct* transfusion of whole blood by the direct method. Formerly, when citrated blood was much in vogue, and it is still given preference over all other methods by many operators, we personally saw many reactions, of more or less severity. But, since taking up the use of direct transfusion (the Unger method), reactions of any degree have been rarely noted, in fact so rarely noted that we have begun to think that all other methods must be placed in a lower category. Leaving out of consideration the probable fact that many reactions observed in the use of citrated blood, many have been, and probably were due to defects and faults in preparation, there still remains the fact that the direct method stands at the head as to freedom from reactions. However, none of the methods or preparations used may be said to be entirely free from reaction, even the best controlled and prepared direct operation.

The use of calcium orally or intravenously as a preparatory measure has not been noted as producing the protection de-

sired, and the same applies to the various thromboplastic preparations. Aside from the use of normal saline solution (and this has always been a procedure, but sometimes used during the course of the operation itself) we have had no experience with Ringer's solution or preparations of acacia. Glucose as a postoperative preparation is not only worthwhile as a measure against the bleeding tendency, but is probably the best of all intravenous preparations for use postoperatively, where the case cannot have administered to it other forms of food or temporary sustaining measures.

All in all, weighing the cases observed in actual practice, however, we believe that of all them direct transfusion of whole blood heads the list and is freer from unpleasant possibilities.

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### VACATION PERILS

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Annually, for many years, the Journal has undertaken to stress some of the many perils incident to warm weather and its concomitant activities—vacation trips of various kinds. In Oklahoma the commonest is the week-end-cook-your-own type, lasting, as a rule, not more than two or three days. The vacationer blithely goes his way, his car loaded down with sleeping gear, fine or crude cooking necessities. It goes without saying that not a few of them overlook at least three vital protective measures, without which great risk is run. These are:

(a) Ordinary mosquito netting, which if used, almost positively prevents malarial infection, usually not a fatal disease, but often accompanied by weeks of weakness, anemia of various degree and at intervals absolute helplessness and confinement to bed.

(b) Antityphoid vaccination—This is practically 100% protective against typhoid and probably equally preventive as to allied colon bacillus infections.

(c) Water supplies—despite the above named preventives as typhoid and colon bacillus infections, one should carry or be prepared to so treat all fluids, milk or water, in order to positively sterilize them. The simplest as well as safest means as to water, is attained by boiling, after which the water may be cooled by icing. The source of milk should be known without question, otherwise it should not be used. The several brands of canned cream

or milk, found in all grocery stores may be relied upon, however, to some people they do not taste so well.

(d) Every party should have a simple first aid kit. This may be very simple and inexpensive; some cotton, gauze, bandage, iodine, mercurochrome. Probably as needful and effective compound for simple irritative eye conditions—glare, heat, dust and sand, are always present, can be made up of any strength of boric acid with boiled water. An ointment, composed of phenol and zinc oxide ointment will be found effective against the many insect pests surely to be encountered.

Finally: Do not neglect to carry along a fairly well balanced diet. It should not be forgotten that apples and citrus fruits are just as necessary in the woods as in the city. The trouble with most of the vacationers is their persistent use of fried bacon and eggs, coffee and stale bread, necessary for hard work, it is true, but they should be rounded out by some vegetables and the fruits above noted. A little timely attention to these simple details may prevent much misery, loss of time and income.

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### *Editorial Notes—Personal and General*

DR. CATHERINE BRYDIA, Ada, is reported ill at her home.

DR. WILLIAM MORELAND, Idabel, is reported ill at his home.

DR. C. S. BRANSON, Coyle, who has been ill, is reported recovered from an operation for appendicitis.

DR. M. M. TURLINGTON, Seminole, is reported ill at his home, having undergone an operation for appendicitis.

DR. A. H. STEWART, Lawton, who has been suffering from a partial stroke of paralysis, is reported improved.

DR. PAT FITE, Muskogee, attended the Southern Society of Clinical Surgeons meeting in Boston, April 4th and 5th.

TULSA COUNTY MEDICAL SOCIETY held their annual spring golf tournament, April 20, at the Indian Hills Country Club.

DR. THOMAS M. BERRY, has been appointed Superintendent of the Western Oklahoma Hospital at Supply, taking the late Dr. Dow Taylor's place.

DR. GEO. H. KIMBALL, Oklahoma City, announces the opening of offices at 1302 Ramsey Tower. He will specialize in traumatic and plastic surgery.

DR. AND MRS. A. RAY WILEY, Tulsa, spent a week visiting in Mexico City, attending the Pan American Medical Congress, held in Dallas, Texas, in March.

THE WOMAN'S AUXILIARY of the American Medical Association will hold their Eleventh Annual Session at the Hotel Pfister, Milwaukee, June 12-16, 1933.

DRS. W. J. WALLACE and A. M. YOUNG, Oklahoma City, announce the opening of offices at 512-513 Medical Arts Building. They will specialize in urology.

DR. P. P. NESBITT, Tulsa, is suffering from a severe injury to his left eye, received when a golf ball hit a tree and rebounded and struck him in the eye. He was wearing glasses and the particles of glass injured the eye ball.

DR. LeROY DOWNING LONG, of The LeRoy Long Clinic, Oklahoma City, was elected President of the Southern Society of Clinical Surgeons at the annual meeting of the group in Boston, Massachusetts, during the month of April.

MUSKOGEE COUNTY MEDICAL SOCIETY presented the following program at their meeting April 24th:

"Skin Grafting"—John F. Burton, Oklahoma City.

"Lantern Slide Demonstration of Common Dermatoses"—C. P. Bondurant, Oklahoma City.

"Am I My Brother's Keeper"—W. A. Tolleson, Eufaula.

"Traumatic Abdomen"—I. B. Oldham, Muskogee.

A CANCER CLINIC was held in Alva, March 28th, sponsored by the Woods-Alfalfa County Medical Society. Dr. E. S. Lain, Oklahoma City, was the principal speaker. The following program was presented:

"The Doctor and the Cancer Patient"—I. F. Stephenson, Alva.

"Prevention of Cancer"—A. E. Hale, Alva.

"Cancer of the Breast"—D. B. Ensor, Hopeton.

"The Progress of the Knowledge in the Study of Cancer"—E. S. Lane, Oklahoma City.

MUSKOGEE COUNTY MEDICAL SOCIETY met April 10th and the following program was presented:

"Ano-Rectal Fistulae,"—R. L. Murdock, Oklahoma City.

"Diseases of the Liver and Biliary System from the Medical Standpoint with Special Reference to Present Day Diagnostic Procedures"—N. P. Eley, Oklahoma City.

"Head Pains Due to Eye Strain"—Forrest S. King, Muskogee.

"Pertinent Points on Muskogee County Medical



Society in Its Relationship to Its Membership and Organized Medicine"—C. E. White, Muskogee.

GARFIELD COUNTY MEDICAL SOCIETY held their monthly meeting March 27th, at Enid. A banquet preceded the program, which was as follows, and was sponsored by the American Society for Control of Cancer, arranged and directed by Dr. E. S. Lane, State Secretary of the Society:

"Prevention of Cancer,"—W. P. Neilson, Enid.

"Doctor and the Cancer Patient"—S. N. Mayberry, Enid.

"Cancer of the Breast"—F. A. Hudson, Enid.

"Transillumination of the Breast"—Bruce Hinson, Enid.

Demonstrations, lantern slides and picture films were also shown.

#### DOCTOR GEORGE W. HINCHEE

Dr. G. W. Hinchee, Oklahoma City, 73 year old physician, died March 11th.

Dr. Hinchee has been retired since 1917, when he came to Oklahoma City from Enid. He was born in 1859 and graduated from Baltimore Medical College, in 1894.

He is survived by his wife, three daughters and two sons.

Burial was in Memorial Park cemetery.

#### DOCTOR CLIFTON A. HOWELL

Dr. C. A. Howell, Oklahoma City, 58 year old pioneer Oklahoma physician, died at his home March 17th, after a few months illness.

Dr. Howell was born at Troy, Missouri, in 1874. He attended the Oklahoma University for five years, and in 1911 was graduated from the school of medicine at Tulane University, New Orleans, Louisiana.

He is survived by his wife and one son.

Burial was in Memorial Park cemetery.

#### DOCTOR DOW TAYLOR

Dr. Dow Taylor, 59 year old pioneer physician of Supply, Superintendent of the Western Oklahoma Hospital, died March 8, having suffered a stroke of apoplexy.

Dr. Taylor was born at Keller, Texas, May 16, 1874. He was graduated from the Memphis Hospital Medical School, Memphis, Tennessee in 1900.

Dr. Taylor is survived by his widow, a daughter and two sons.

Burial was at Ardmore, Oklahoma.

#### DOCTOR HUGH P. MARKHAM

Dr. H. P. Markham, pioneer physician of Pauls Valley, died March 7th of chronic nephritis.

Dr. Markham was born at Farmersville, Texas, August 7, 1867. He graduated from the Kentucky School of Medicine, Louisville, Kentucky, in 1887.

He was a member of the Garvin County Medical Society and State Medical Association at the time of his death.

#### GEORGE F. WOODRING

Whereas, the Great Physician, Almighty God, in His infinite wisdom has called from our midst our friend and fellow worker Dr. George F. Woodring, and

Whereas, in the passing of Dr. Woodring his loss is keenly felt by us, his associates of many years in the medical profession as well as by his legion of friends throughout the countryside.

Be It Further Resolved, that in the passing of Dr. Woodring our hearts are made sad by the loss of our well-beloved friend and fellow physician and that our sympathy goes out to his grief-stricken family in this their hour of trouble.

Be It Further Resolved, that in the death of our friend the profession which he honored has lost one of its most earnest and sincere workers and the community one of its oldest and most useful and valuable citizens.

And Be It Further Resolved, that a copy of these resolutions be spread upon the minutes of our Society, a copy sent to the State Medical Journal and one sent to the family.

Committee:

H. C. WEBER,

O. S. SOMERVILLE,

Washington County Medical Society

#### SOME UNTOWARD EFFECTS OF ACETYL-SALICYLIC ACID

According to R. W. Lamson and Roy Thomas, Los Angeles (Journal A. M. A., July 9, 1932), drug idiosyncrasies in allergic patients are not infrequent. An abnormal response to acetylsalicylic acid is probably more common than to any other drug. Nostrums containing this compound are not "harmless" from the standpoint of the allergic individual. The authors report four cases in an effort to substantiate that point of view. One patient died within a short time after taking a small dose of this nostrum.

# PROGRAM

## FORTY-FIRST ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY, OKLAHOMA

MAY 15, 16, 17, 1933

(This program subject to changes up to the last moment; these, if made, will appear on the hand program issued at the meeting).

*Meeting Place*—All meetings will be held in the Skirvin Hotel. Telephones, local (Oklahoma City) 2-1251; L. D. 122.

*Registration*—Top Floor Skirvin Hotel. Please see that you are in good standing for 1933, before you attempt to register.

*Council*—Will meet Monday, May 15, 3:00 P. M., for the transaction of business affairs. After that on call of the body.

*House of Delegates*—Will meet Monday, May 15, 7:30 P. M., thirteenth floor, Venetian Room, and thereafter subject to call of the body.

House of Delegates will also meet on Mezzanine floor, Tuesday, May 16, 8:00 A. M., the first order of business being the election of officers.

*Delegates*—Should present their credentials to the Credentials Committee, Mezzanine floor, prior to these meetings.

*Credentials Committee*—Drs. W. A. Howard, Chelsea, and C. M. Pounders, Oklahoma City.

*Oklahoma Pediatric Society*—Will meet Monday, May 15th.

*Guests of Honor*—Dr. George W. Crile, Cleveland, Ohio; Dr. Seale Harris, Birmingham, Alabama.

*Medical Reserve Corps Dinner*—Tuesday, May 16th, 6:00 P. M. Reservations made through Dr. Rex Bolend, Medical Arts Building.

*Registration and Exhibits*—Registration will be held in the Rose room, southeast corner, thirteenth floor.

Commercial and Scientific Exhibits will be placed in the same room and hallway approaching.

*Discussion of Papers*—Every physician proposing to open the discussion of any paper should attempt to secure a copy of same for his information before the meeting.

*Telephone Service*—Those expecting telephone calls should place their probable location at the telephone office on the ground floor.

### GOLF

#### MONDAY, MAY 15TH

Annual Tournament, Oklahoma City Golf and Country Club (Nichols Hills), starting at 9:00 A. M. Transportation from Skirvin Hotel will be provided. All green fees paid.

#### TUESDAY, MAY 16TH

All members of the State Medical Association may play at any of the following courses, green fees paid by person playing:

Oklahoma City Golf and Country Club (Nichols Hills).

Lakeside Country Club.

Twin Hills Golf Club.

Lincoln Park Golf Course.

Edgemere Golf Course.

*Committee*: Drs. Wendell Long and Leo Cailey.

Prizes donated by the following firms of Oklahoma City:

American Optical Company.

Auto Hotel.

Barth's Clothing Company.

Caviness Surgical Company.

Chig Men's Apparel.

Harbour-Longmire Furniture Company.

Ingram Drug Company.

Kerr Dry Goods Company.

Manly Office Supply Company.

McEldowney & Son Hardware Co.

Newbills Men's Furnishers.

Riggs Optical Company.

Roach Drug Company.

Rorabaugh-Brown Dry Goods Co.

Schiff-Mayer Office Supply Company.

Sturm's Clothing Company.

Tower Drug Company.

Western Bank and Office Supply Co.

Wick, the Druggist.



## SECTIONS

All Sections will meet at 1:30 P. M., Tuesday, May 16th, and at the same hour on Wednesday, May 17th.

Meeting places will be as follows:

*Surgery*—Venetian Room—on the roof.

*Medicine*—Crystal Room—Mezzanine floor.

*Obstetrics and Pediatrics*—Empire Room—Mezzanine floor.

*Eye, Ear, Nose and Throat*—Wilson Room—Mezzanine floor.

*Urology and Dermatology*—Parlor G—Mezzanine floor.

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## GENERAL SCIENTIFIC SECTIONS

Will be held in the Venetian Room, thirteenth floor, beginning at 8:00 A. M.

TUESDAY, MAY 16TH

(Morning)

8:00 *Moving Pictures.*

9:00 *The Dietary Management of Peptic Ulcer*—SEALE HARRIS, Birmingham, Alabama.

10:00 *Progress in Dermatology*—JAMES STEVENSON, Tulsa.

11:00 *Indications for and End-Results of Denervation of the Adrenal Glands*—GEO. W. CRILE, Cleveland, Ohio.

WEDNESDAY, MAY 17TH

(Morning)

8:00 *Moving Pictures.*

9:00 *Mental Diseases—A Neglected Phase of Medical Practice*—NED R. SMITH, Tulsa.

10:00 *Hyperinsulinism*—SEALE HARRIS Birmingham, Alabama.

11:00 *Relationship of the Urologist to the General Practitioner*—SHADE D. NEELY, Muskogee.

11:30 *Some Common Urological Problems*—C. B. TAYLOR, Oklahoma City.

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## GENERAL MEETING

TUESDAY, MAY 16TH

(Evening)

Empire Room—Mezzanine Floor. Open to general public.

8:00 *Invocation*—REV. EUGENE ANTRIM, President Oklahoma City University.

*Introduction of Guests*—HENRY H. TURNER, General Chairman.

*Address of Welcome*—LEROY LONG, Oklahoma City.

*Response*—R. M. ANDERSON, Shawnee, Retiring President.

*President's Address*—T. H. MCCARLEY, President, McAlester.

9:30 *President's Reception and Dance*, Venetian Room, Skirvin Hotel.

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## WOMAN'S AUXILIARY

Register on the Mezzanine floor, Skirvin Hotel.

MONDAY, MAY 15TH

(Morning)

10:00 Meeting of the State Executive Board.

(Afternoon)

2:00 Motorcade over city; followed by informal teas (courtesy members of the local Executive Board).

TUESDAY, MAY 16TH

(Morning)

10:00 Annual Meeting of the Woman's Auxiliary, Skirvin Hotel.

(Afternoon)

1:00 Annual County Luncheon; followed by bridge at the Oklahoma City Golf and Country Club.

(Evening)

8:00 President's Inauguration; followed by dancing.

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## SECTION ON GENERAL SURGERY

Venetian Room—on the Roof.

MAY 16-17, 1933

*Chairman*, F. L. CARSON, Shawnee.

*Vice-Chairman*, R. L. MURDOCH, Oklahoma City.

*Secretary*, L. C. VANCE, Ponca City.

*Chairman's Address*—F. L. CARSON, Shawnee.

*Influence of Endocrines on Menstruation*—KENNETH J. WILSON, Oklahoma City. (Discussion opened by WENDELL LONG, Oklahoma City).

*Twelve Years Use of Radium in Gynecological Conditions*—PAT FITE, Muskogee. (Discussion opened by J. E. HUGHES, Shawnee).

*Injuries of the Nerves and Tendons of the Hand* — SUMNER L. KOCH, Chicago. (Discussion opened by FRED GLASS, Tulsa).

*The Injured Hand* — CURT VON WEDEL, Oklahoma City. (Discussion opened by FRED GLASS, Tulsa).

*Anatomy and Surgery of the Hand*—C. R. SALSURY, Oklahoma City. (Discussion opened by FRED GLASS, Tulsa).

*Chronic Subdural Hematoma* — HARRY WILKINS, Oklahoma City. (Discussion opened by FRED CRONK, Tulsa).

*Problems of Acute Appendicitis*—HORACE REED, Oklahoma City. (Discussion opened by G. N. BILBY, Oklahoma City).

*Varicose Ulcers and Their Treatment*—HORTON E. HUGHES, Shawnee. (Illustrated with moving pictures). (Discussion opened by JOHN W. RILEY, Oklahoma City).

*Surgical Treatment of Carcinoma of the Rectum*—LEROY DOWNING LONG, Oklahoma City. (Discussion opened by R. L. MURDOCK, Oklahoma City).

*Biological Effects of Radiant Light*—L. A. TURLEY, Norman. (Discussion opened by E. S. LAIN, Oklahoma City).

*Carcinoma of the Cervix* — J. F. KUHN, Oklahoma City. (Discussion opened by GRIDER PENICK, Oklahoma City).

*Blood Transfusion*—F. A. HUDSON, Enid. (Discussion opened by EUGENE RICE, Shawnee).

*Suspensions of the Uterus* — DWIGHT B. SHAW, Seminole. (Discussion opened by CLAUDE CHAMBERS, Seminole).

*Ectopic Pregnancy and It's Treatment*—R. B. GIBSON, Ponca City. (Discussion opened by DICK LOWERY, Oklahoma City).

*A Better Surgical Diagnosis*—ALEXANDER B. LEEDS, Chickasha. (Discussion opened by McLAIN ROGERS, Clinton).

*Cases of Phytobezoar Occurring in and Around Tulsa, Oklahoma*—H. D. MURDOCK, Tulsa. (Discussion opened by LEROY LONG, Oklahoma City).

*Subphrenic Abscess Following Appendiceal Abscess* — BENJAMIN W. WARD, Tulsa. (Discussion opened by JOHN F. PARKS, McAlester).

## SECTION ON UROLOGY, SYPHILOLOGY AND DERMATOLOGY

Parlor G—Mezzanine Floor

*Chairman*, JAMES STEVENSON, Tulsa.

*Vice-Chairman*, C. P. BONDURANT, Oklahoma City.

*Secretary*, SHADE D. NEELY, Muskogee.

TUESDAY, MAY 16TH

(1:30 P. M.)

*Chairman's Address*—JAMES STEVENSON, Tulsa.

*Incidence of Syphilis* — J. F. CAMPBELL, Muskogee.

*Moles*—D. G. DUNCAN, Oklahoma City.

*A New Method of Protein Fever Therapy for Resistant Syphilis*—M. O. NELSON, Tulsa.

*The Prognosis of Syphilis*—C. P. BONDURANT, Oklahoma City.

WEDNESDAY, MAY 17TH

1:30 P. M.)

*Foreign Protein Therapy in Urology*—A. R. SUGGS, Ada.

*Transurethral Removal of the Prostate with the Resectotome and the Improved Cautery Punch*—W. J. WALLACE, Oklahoma City.

*A Treatment of Chronic Gonorrhea*—S. F. WILDMAN, Oklahoma City.

*Renal Pathology Seen in Toxemias of Pregnancy* — BASIL HAYES, Oklahoma City.

*Anomalies of the Ureter* — E. H. FITE, Muskogee.

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## SECTION ON OBSTETRICS AND PEDIATRICS

Empire Room—Mezzanine Floor

MAY 16-17, 1933

*Chairman*, GEORGE R. OSBORN, Tulsa.

*Vice-Chairman*, C. V. RICE, Muskogee.

*Secretary*, CARROLL M. POUNDERS, Oklahoma City.

*Chairman's Address*—

*Obstetrical Problems* — GEORGE R. OSBORN, Tulsa.

*Prenatal Care*—W. A. DEAN, Tulsa. (Discussion, R. C. LOWRY, Oklahoma City).



*Obstetrical Hemorrhage*—E. P. ALLEN, Oklahoma City. (Discussion—C. E. WHITE, Muskogee).

*The Use of Forceps*—WALTER W. WELLS, Oklahoma City. (Discussion—J. B. ESKRIDGE, JR. Oklahoma City).

*Spinal Anaesthesia, Report of Three Hundred Abdominal Cases*—P. N. CHARBONNETT, Tulsa. (Discussion—D. L. GARRETT, Tulsa).

*Obstetrical Reminiscences, or, The Progress of Obstetrics in Oklahoma*—J. A. HATCHETT, Oklahoma City.

*Presentation of a Case of Hemorrhagic Disease of the Newborn with Unusual Symptomatology*—C. J. ALEXANDER, Clinton. (Discussion—GEO. GARRISON, Oklahoma City).

*The Prevention of Goiter*—R. M. HOWARD, and FORREST M. LINGENFELTER, Oklahoma City. (Discussion—LeROY LONG, Oklahoma City).

*Hemorrhagic Disease of the New-born*—WALLIS S. IVY, Duncan. (Discussion—C. E. BRADLEY, Tulsa).

*Anemia in Infancy and Early Childhood*—C. V. RICE, Muskogee. (Discussion—HUGH GRAHAM, Tulsa).

*The Present Status of Vitamins*—DAVID J. UNDERWOOD, Tulsa. (Discussion—C. W. ARRENDELL, Ponca City).

*The Child That Doesn't Eat*—A. L. SALOMON, Oklahoma City. (Discussion—JULIAN FIELD, Enid).

## SCIENTIFIC EXHIBITS

Rose Room—Skirvin Hotel

DR. HENRY TURNER—*Exhibit of Endocrinopathies.*

BALYEAT HAY FEVER AND ASTHMA CLINIC—*Allergic Diseases.*

DRS. WEST AND ROUNTREE—*Fracture Exhibit.*

LAIN AND ROLAND CLINIC—*Electrogalvanic Phenomena in the Oral Cavity Caused by Dissimilar Metallic Dentures.*

WESLEY HOSPITAL—*Museum and Laboratory Specimens.*

DR. CURT VON WEDEL—*Plastic Surgery.*

DR. D. H. O'DONOGHUE—*Demonstration of Orthopedic Appliances.*

McBRIDE CLINIC—*Orthopedic Exhibit.*

UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE—*Exhibits.*

## SECTION ON GENERAL MEDICINE

Chairman, R. C. PIGFORD, Tulsa.

Vice-Chairman, LELAND LAMB, Clinton.

Secretary, E. RANKIN DENNY, Tulsa.

TUESDAY, MAY 16

1:30 *Chairman's Address—The Problem of Thrombosis*—R. C. PIGFORD, Tulsa.

1:50 *A Few Heart Studies*—F. G. DORWART, Muskogee, (To open discussion).

2:10 *Serum Treatment of Malta Fever, Report of Five Cases*—B. L. BRANLEY, Tulsa. (To open discussion—D. O. SMITH, Tulsa).

2:30 *Tularemia*—PAUL HEMPHILL, Pawhuska.

2:50 *Infectious Mononucleosis*—W. J. BRYAN, JR., Tulsa. (To open discussion—L. J. MOORMAN, Oklahoma City).

3:10 *Digest of The Report of The Committee On The Cost of Medical Care*—J. T. MARTIN, Oklahoma City (To open discussion—C. J. WOOD, Tulsa, A. L. BLESCH, Oklahoma City).

3:30 *Why Mental Hygiene*—J. J. GABLE and J. L. DAY, Norman. (To open discussion—L. S. BLACHLY, Oklahoma City, F. M. ADAMS, Vinita).

3:50 *The Atropine Treatment of Postencephalitic Parkinsonian Syndrome*—F. M. ADAMS and P. L. HAYS, Vinita. (To open discussion—N. R. SMITH, Tulsa).

4:10 *Pneumonia, Differential Typing and Treatment*—ELBERT H. SHULLER, McAlester. (To open discussion—F. G. DORWART, Muskogee).

WEDNESDAY, MAY 17TH

1:30 *The Physiology and Diagnosis of The Common Endocrinopathies*—P. A. STALEY, Fairfax. (To open discussion—HENRY H. TURNER, Oklahoma City).

*Symposium on Diabetes*—

1:50 *The Diagnosis of Diabetes Mellitus, The Significance of Glycosuria*—G. L. DRIVER, Ponca City.

2:05 *Diabetes In Children*—LEA A. RIELY, Oklahoma City.

- 2:20 *Diabetes With Cardiovascular Disease*—HOMER RUPRECHT, Tulsa.
- 2:35 *The Management of Diabetes and Its Complications*—SEALE HARRIS, Birmingham, Alabama.  
To open discussion on Symposium W. J. TRAINOR, Tulsa, and C. J. FISHMAN, Oklahoma City.
- 3:30 *Clinical Allergy—Factors Governing Diagnostic and Clinical Procedures*—HERBERT J. RINKEL, Kansas City, Missouri. (To open discussion—E. RANKIN DENNY, Tulsa, and FANNIE LOU BRITTON, Oklahoma City).
- 3:50 *Important Physical and Biological Principles in Radiation Therapy*—RALPH E. MYERS, Oklahoma City. (To open discussion—M. B. LHEVINE, Tulsa).
- 4:10 *Recent Advances In The Diagnosis and Treatment of Pernicious Anemia, Report of A Case*—E. E. BAUM, Tulsa. (To open discussion—WANN LANGSTON, Oklahoma City).
- 4:30 *The Latest Refinements in The Vaccine Treatment of Chronic Arthritis, Non Specific Type*—E. S. GOLDFAIN, Oklahoma City. (To open discussion—EARL D. McBRIDE, Oklahoma City).
- Carcinoma of the Caecum—Report of a Case in a Child Four Years of Age*—H. A. WALKER, Pawhuska.

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SECTION ON EYE, EAR, NOSE  
AND THROAT

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Chairman, CHARLES B. BARKER, Guthrie.  
Vice-Chairman, MARVIN D. HENLEY, Tulsa.  
Secretary, WILLIAM L. BONHAM, Oklahoma City.

TUESDAY, MAY 16TH  
(1:30 P. M.)

Chairman's Address—

*Safety First Cataract Procedure*—  
CHARLES B. BARKER, Guthrie.

Symposium on "Headache"—

*Headache as Seen By the Internist*—J. L. LEHEW, Guthrie.

*Neurological Headache*—NED R. SMITH, Tulsa.

*Gynecological Headache*—J. W. KELSO, Oklahoma City.

*Ophthalmological Headache*—C. M. FULLENWIDER, Muskogee.

*Rhinological Headache*—W. O. SMITH, Tulsa.

*Otological Headache*—A. S. PIPER, Enid.

*Laryngeal Dyspnoea*—A. L. GUTHRIE, Oklahoma City. (Discussion opened by J. C. MacDONALD, Oklahoma City).

*Recurrent Retinal Hemorrhage*—J. J. CAVINESS, Oklahoma City. (Discussion opened by JOHN R. WALKER, Enid).

*Diagnosis and Treatment of Chronic Sinusitis*—J. C. BRASWELL, Tulsa. (Discussion opened by E. S. FERGUSON, Oklahoma City).

WEDNESDAY, MAY 17TH

Symposium on "Vertigo"—

*Ophthalmological Vertigo*—JAMES R. REED, Oklahoma City.

*Otological Vertigo*—T. G. WAILS, Oklahoma City.

*Vertigo as Seen By the Internist*—M. F. JACOBS, Oklahoma City.

*Vertigo as Seen By the Neurological Surgeon*—HARRY WILKINS, Oklahoma City.

*Tuning Forks With Demonstration*—WM. L. BONHAM, Oklahoma City. (Discussion opened by H. C. TODD, Oklahoma City).

*Protein Therapy in Eye Conditions*—CHAS. H. HARALSON, Tulsa. (Discussion opened by M. K. THOMPSON, Muskogee).

*Attorney versus Physician*—HON. A. J. FOLLENS (by invitation), Oklahoma City.

*Syphilis of The Eye*—WALTER A. HUBER, Tulsa. (Discussion opened by L. M. WESTFALL, Oklahoma City).

*Eye Malingerers*—JOSEPH W. SHELTON, Oklahoma City. (Discussion opened by OTTO I. GREEN, Bartlesville).

*Epistaxis*—H. S. BROWN, Ponca City. (Discussion opened by WM. C. MILLER, Guthrie).



## COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of the Journal preceding the Annual Session.

### REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

#### Medical Education

Fundamentally, undergraduate medical education may be divided into two parts:

1. The teaching of what is known about medicine.
2. Exploration of the unknown in quest of undiscovered truths.

The emphasis placed upon the one part or the other ought to be determined by the purposes and facilities of the medical school.

The purpose of the average medical school is to prepare students for the practice of medicine, because most of its graduates enter the practice of medicine. The corollary is that the average medical school should teach its students the known truths of medicine, and how to apply them, leaving as a purely incidental matter investigation into the unknown.

This does not mean that the medical student or the practitioner of medicine should not discover anything. On the contrary, if he is familiar with the known truths of medicine, he will have an excellent foundation—we would say an indispensable foundation—for the incidental exploration of the unknown. Some of the most important original contributions to medicine have been made by those who were first trained for the practice of medicine.

The selection of students is another matter of fundamental importance in medical education. Integrity, intelligence and industry should be definite requirements. There should be no substitute for them. He who does not have these requirements may pass the examinations, but he will fail to represent medicine as it ought to be represented. He will bring no credit to his school; no good to the public; no strength to the profession. In no other field of education is it so necessary to utterly ignore "influence" in the selection of students.

Medical education means education in medicine. There is but one medical profession. It is not circumscribed. It approves every means, agent or procedure, the value and safety of which has been scientifically proved. It condemns every means, agent or procedure whose value and safety have not been proven, or whose alleged efficacy rests upon erroneous or false hypotheses. To this end, both under-graduate and post-graduate medical education should indicate the duty of having no professional relations whatever with cults and charlatans. This is a question of immediate, supreme importance in this State, because a departure from the above well established and fundamental principles would jeopardize the medical school as a teaching institution. For that reason any departure from the present status is earnestly opposed by Oklahoma State Medical Association.

Medical education begins as under-graduate education, but it only begins there. While this is a perfectly obvious statement, your committee believes that it is worthwhile to call attention to it. Attention is called to it, first, for the reason that continuation of study after graduation is necessary; and, second, for the particular reason that now the facilities for such study are easily available. Books, periodicals, medical societies—all are easily available. In addition, in this State there are extension courses which creditably take the place of post-graduate courses in distant cities at the expense of time and money. But medical education does not stop even there. The physician who complies with the requirements of his profession will eschew commercialism and deal openly and honestly with his patients and with his fellow physicians. And, added to this, he will take a deep and sympathetic interest in those who depend upon him under circumstances where they must have not only scientific service but moral and spiritual support.

#### Hospitals

In the evolution of medicine the hospital has become more and more essential. The type of service it renders, its professional character and its worth to patients and public depend upon the integrity, character, ability and helpfulness of the physicians who work in it. There should, therefore, be mutual and constructive cooperation between the staff and the hospital.

Hospital standardization has the support of every responsible and influential medical organization in this country. Standardization is simple, reasonable, and within the reach of any hospital, regardless of size. In a few words it means that the hospital should have equipment and facilities for the comfort and adequate care of the patient, and that it will not permit physicians who work in it to split fees. Your committee calls attention to the importance of this matter in its relation to ethics and to the welfare of the patient.

Taking into consideration the significant fact that the majority of hospital patients are persons of moderate or very limited means it would seem that, while hospital buildings should be substantial and safe, the effort ought always to be to make the plant as simple as possible. The same thing holds in connection with equipment. Deluxe buildings and sumptuous furnishings and unnecessary equipment make a tremendous over-head load for both the hospital and the patient.

In this State there is no adequate provision for the uniform care of indigent and irresponsible patients in communities in which they live or where they happen to be when they need hospital service. As a result, especially in emergencies, they are admitted by the hospitals which too often take care of them without any remuneration whatever. It is believed that this situation could be largely remedied by a state law like that of Pennsylvania through which qualified and acceptable hospitals in various parts of the state would receive assistance from a state fund for this particular purpose.

Finally your committee wishes to revert to the subject of medical education for the purpose of calling attention to the importance of adequate training of physicians in surgery before they are permitted to practice surgery.

As the matter now stands, the graduates of many schools are given diplomas conferring upon them the authority to practice surgery without

any training after leaving the class rooms and student clinics, and they have been eligible for examination and licensure in most of the states. Now some of the states require a fifth, or intern year, which is usually a rotating internship with but little time given to surgery.

The practice of surgery is often acutely exacting. It often requires instant decision and dexterity. It requires poise and balance that can be acquired only by actual work in surgery. Any physician knows that he would not want a physician untrained in surgery to operate upon him, and he knows why he would not want him. It is an important question that must be discussed and fixed. The progress of medical education and the efficiency of hospital service demand it. To that end your committee believes that it is the duty of Oklahoma State Medical Association to lend its support to a revision of medical education so that a diploma in surgery will be withheld until after adequate training in surgery.

LeROY LONG, Chairman,  
A. L. BLESCH,  
J. M. BYRUM.

#### REPORT OF COMMITTEE ON ECONOMICS

Your Committee on Economics submits the following report:

The Committee found many things which it deemed important to the medical profession. One of the most important is the report of the National Committee on the "Cost of Medical Care." As most of you already know there is a majority report and a minority report. Too much time and space would be consumed in the report to make a detailed discussion of the National Committees' report, but suffice to say that your Committee does not agree to the majority report as a whole and we feel that we must condemn the recommendation of the majority report as unsound, unnecessary and detrimental in every way to the profession and not the best course for the patient.

There is an increasing amount of medical care being paid for by the taxpayer. Your Committee feels that this condition fluctuates with general economic conditions; that it is neither the desire of the medical profession nor the taxpayer to increase "public medical care." Therefore, this committee desires to emphasize the fact that the medical profession should not accept this condition as permanent, or that it will continue to increase indefinitely, but as general economic conditions improve "public medicine" should decrease. It will decrease if the profession does not become panicky and plunge headlong into state medicine. The obligation and responsibility to prevent this is with the profession and it is up to us to save ourselves. This is a serious problem for the legislative committee.

A general survey is being made by the American Medical Association of the various medical insurance groups for medical care over the United States. It is too soon to fully estimate the worth of these organizations to the public or the medical profession. It does seem however that any organization to subsidize the business of the profession into lay hands is to be condemned from the start. Even if the organization is owned completely by doctors such practice is generally looked upon as unfair competition. This committee believes that the most practical method of practice in Oklahoma is a well formed clinic

group charging for each service, but not on a monthly or yearly premium basis. This is the most economical to the doctor and in turn a saving to the patient. While in some localities this system does not work so well, but in general we think it is the best for our state.

Last year this committee considered a program of education on "medical economics" by the Extension Department of the University of Oklahoma. While this program is temporarily held in abeyance, we hope to complete this at a more propitious future.

A. RAY WILEY, Chairman,  
W. H. BAILEY,  
J. HUTCHINGS WHITE.

#### REPORT OF CRIPPLED CHILDREN'S COMMITTEE

In its annual report this year, the Crippled Children's Committee feels that it is necessary to bring to the attention of the profession a review of the effort on the part of the State of Oklahoma to care for crippled children. It is recommended by the committee that the facts be studied, by the profession, from the standpoint of whether or not the state is accomplishing its purpose and whether or not these activities are promoting State Medicine to the extent that recommendation should be made for future progress.

In 1920 attention was first given to the care of crippled children by civic organizations. In 1923 Senate Bill No. 311 was passed, which provided that the counties should send crippled children to the State University Hospital. A definitely organized Crippled Children's Society was chartered on September 24, 1925. In 1926 House Bill No. 170 replaced the former law and provided a tenth mill levy ad valorem tax to be used in each county specifically for care of crippled children under twenty-one years of age. The deficiency was to be made up by appropriation of the Legislature. A Crippled Children's Hospital was built by the State at an expense of approximately \$450,000.00 and this together with private donations makes an investment of approximately one-half million dollars.

The law provides that other hospitals approved by the American College of Surgeons may be appointed to receive and treat cases committed under the Act. A board composed of members of the Faculty of the Medical School of Oklahoma University makes appointments of surgeons and hospitals. The law stipulates that to qualify, an orthopedic surgeon or plastic surgeon must devote 60% of his time to his specialty.

The Crippled Children's Society holds clinics throughout the State and examines children who are prospective patients for the hospital. Two hundred nineteen clinics have been held and 7,877 children have been examined. The total number of cases on record in the office of the Secretary of the Crippled Children's Society, is 10,265; total cases hospitalized is 6,781.

It is estimated that annual receipts from the counties for the care of children are \$80,000.00, and the annual appropriation in addition has been about \$170,000.00, making a total of \$250,000.00 spent annually in the care of children committed under the Act.

In 1932, 2,744 children were committed—699 of these were orthopedic cases; 752 were medical



cases; 464 were nose, throat and eye cases; 582 were plastic, general surgery and hernia cases; and 247 were miscellaneous.

The Oklahoma Law does not define "crippled child." It is observed from the statistics quoted above that the orthopedic cases are in the minority.

One of the most recent laws enacted for the care of crippled children is in Kansas, in which the crippled child has been defined as one with a hair lip, cleft palate, congenital cataract, orthopedic condition or a deformity. It does not include recent fractures. The cases are not sent to any particular centralized hospital, but are committed to hospitals approved by the College of Surgeons. The orthopedic surgeon is paid a small fee, and braces are purchased at designated prices. A commission is appointed by the Governor to administer the law.

Your Committee has compared various laws and finds that the crippled children activities are carried on in the State of Oklahoma with less friction and with better results, than in any other state.

It is the recommendation of the Committee that no effort be made to change the law. The Committee, however, has no way of determining the choice of the profession at large, and recommends that this matter be given due attention by those who may favor or disfavor the law. To this end any member of the association who is interested should send his answers in the following questionnaire, to the Committee:

1. Have you had patients committed under House Bill No. 170 providing crippled children?

2. From the physician's standpoint, do you approve of the law?

3. Do you think the law provides the best method of caring for crippled children?

4. Do you think the cases should be centralized for their care or provisions made whereby certain cases can be cared for in districts near the home of the child?

5. Do you approve of the administration by the medical faculty of the University or would you favor an independent commission?

EARL D. McBRIDE, Chairman,  
BEN H. COOLEY,  
WADE SISLER.

#### REPORT OF THE COMMITTEE ON INDUSTRIAL AND CONTRACT PRACTICE

Since the report of this committee in 1932, there has been very little change observed in the condition of contract practice in the State of Oklahoma. Existing economic conditions have apparently been more of a deterrent than a stimulant in this respect.

At the present time it seems apparent that the senate and legislature of the state will probably enact legislation setting up some form of state industrial insurance but it remains to be seen as to what the practicability of this law will be. It cannot be foreseen by the committee at this time as to what effect it will have on the medical profession in its relation to industrial practice.

PAT FITE, Chairman,  
CYRIL E. CLYMER,  
W. G. HUSBAND.

#### REPORT OF COMMITTEE ON "STUDY AND CONTROL OF VENEREAL DISEASE"

To the President and the Members of the House of Delegates of the Oklahoma State Medical Association:

This committee recognizes three separate and distinct diseases which have been catalogued in the past and studied under the general heading of "Venereal Disease." 1. Syphilis. 2. Gonorrhea. 3. Chancroid. It wishes to call attention to another disease quite often found in gynecology, namely, "Trichomona infection."

We can conceive of no branch of medicine which does not overlap in the course of these three diseases, and wish to make clearer some ideas and concepts concerning them.

1. Syphilis is a constitutional disease, not necessarily venereal, caused by the invasion of the body tissues and fluids of the spirocheta pallida. Its initial lesion termed the "chancre," "hard chancre," etc., is poorly understood, we believe. We want to impress upon the profession the importance of rigid examination of all genital sores. These lesions should not ever be touched with medicinal agents until proper procedures as dark field examinations, repeated, have eliminated the spirochete pallida. The public should be impressed and advised of this. Should this lesion be negative for this organism, the patient, if he gives history of exposure recently, (within past three months) should be kept under observation for another three months, and during this time blood serology (Wassermann) should be made. If negative at this time this patient may be instructed that he probably has not syphilis. If his lesion shows spirochete pallida then before antiluetic therapy is administered, blood serology, (Wassermann) should be made, to determine whether this patient is sero-positive or sero-negative. This gives the physician much information as to prognosis and proper therapy to institute.

We would condemn the indiscriminate use of "arsphenamine," neo-arsphenamine, bismuth, mercury, and other drugs in treating syphilis. We would plead with the physician who has decided to treat these cases to study the most modern therapy, as instituted by the five clinics reporting during the past year in "Venereal Disease Information," published by the Public Health Service of U. S. Government. We would plead with you not to give the patient one "shot," two "shots" or ten "shots" and pronounce him cured when the initial lesion leaves or the blood Wassermann is negative. Nothing could be more dangerous. We would plead with the physician to insist on proper therapy and enough, and never to discharge a patient with known syphilis until he has a negative Wassermann repeated, and negative spinal puncture. We would advise them that in the so-called Wassermann fast patient, the probability of his not having had proper or enough antiluetic therapy, also the possibility of central nervous system syphilis. We want to advise the profession that the physician treating primary syphilis is the man responsible for the future health of the patient, that this disease as mentioned above is constitutional, and never should be pronounced cured with less than eighteen months treatment and three years observation.

Congenital syphilis is inexcusable, providing the physician has been employed during the en-

tire period of gestation. In the field of obstetrics we wish to impress you with the importance of routine Wassermanns. We wish to plead with you to institute early antiluetic therapy in all Wassermanns in pregnancies which are not totally negative. We would like for a very minute history be taken in first visit, and in each case where syphilis is given in clear cut history, always give antiluetic therapy during this gestation. We would advise circumcision in all males possible, when the entire glans penis is covered.

To the general practitioner we would like to give warning of latent syphilis, and encourage him to become more syphilis conscious. We believe it pernicious to treat this disease when it is not present, but realize that the error is more common on the other side, not properly diagnosing syphilis when present.

Chancroid, soft sore, soft chancre, etc., is the title given to the ulcerating multiple (generally) genital lesions commonly seen. Etiology bacillus of ducre, this is not a lesion caused by filth, but highly infectious, and in most instances accompanied by inguinal suppuration. This should never be diagnosed alone, but dark field examinations made to eliminate the organism of syphilis. Its therapy is most generally understood.

Gonorrhea. In the realm of gonorrhea we wish to warn the profession of the futility of eliminating this disease with any local injection. We would like you to impress on this patient more the fact that he is sick, needs rest, plenty of water, absolute refrainment from alcoholics and sexual excitement. That co-operation on his part is more necessary than anything you can do. That these patients should be made to understand it is their duty to society to get fully well before dismissal. We believe it pernicious to instrument any case of acute gonorrhea, give injections or irrigations at too high pressure. We believe that the subjugation of prostitution only leads to more promiscuity, that the female, if you do not give her proper attention and impress her with the seriousness of her disease, will in all probability eventually become a street walker, and a foundation for dissemination of this disease. We admit there is no specific in treating this disease, and also know that the great majority of these patients first are seen by the general practitioner, and that this is the proper time to institute treatment and regime that will totally eliminate this disease from the patient.

We believe that the public should be contacted by the medical profession in every way possible, and advised of proper preventive measures, absolute cleanliness, voiding after intercourse, local application of mercury ointments and instillation in glans of a mild antiseptic. We know that much good came from the observance of G. O. 45 in the U. S. Army, and strict adherence to venereal disease prophylaxis will prevent much infection. We believe that this should be taught in the high schools of this state, we believe that the old idea of suppression of sex, and all sexual topics only tend to create more mystery on this subject, that the high school children can be taught this in a sane manner, and in a way that will not create any chaotic erotic impulses.

We think that if more moneys were spent by the state and federal government in venereal disease prevention and treatment that much good would result. That centrally located stations for treatment and prevention should be established in all cities of more than ten thousand popula-

tion. Pamphlets should be distributed on venereal disease prevention.

We are not looking for the millennium, but must shrink back in shame in admitting that these United States show a definite increase in venereal disease occurrence since the world war. That Germany shows a definite and greatest decrease of any country. We suggest that methods used there be studied, and if possible instituted in this country.

We hope that soon there will be perfected a standard blood Wassermann technic, that this be adopted generally, and thus eliminate much confusion and chaos from this particular field.

SHADE NEELY, Chairman,  
ROBERT H. AKIN,  
HENRY S. BROWNE.

#### REPORT OF COMMITTEE ON STUDY AND CONTROL OF CANCER

Your committee is able to state that an unusual amount of interest has been manifested in Oklahoma during the past year in the study of cancer among the physicians of the state, and that the laity is also becoming more "cancer-conscious."

Approximately one thousand leaflets have been distributed, these having been furnished by the American Society for the Control of Cancer. A great many of the newspapers published in various cities of our state have given widespread publicity to educational articles upon cancer, most of these being copies also furnished by the national organization before mentioned, but some also by qualified physicians in Oklahoma.

In the Journal of the Oklahoma State Medical Association, seven articles have appeared during the past year dealing with cancer. Four or five county medical societies have devoted one entire program to the subject, and, of course, numerous papers have been presented on cancer as a part of a program. In several of the larger cities films dealing with cancer education have been shown, and these have attracted audiences from all the surrounding communities.

A statewide program of breast tumor clinics is at this writing underway, extending from March 15th to April 10th. The Extension Division of the Oklahoma State University has rendered invaluable assistance in this particular campaign. Over fifteen of these clinics will be given.

Arrangements are being made at this time to have some short talks addressed to the vast radio audience from the several broadcasting stations in the state.

Briefly, the interest in cancer has shown a healthy growth in Oklahoma during the past year. During the next year it is probable that cancer of the uterus will be stressed in this state, much as breast cancer was emphasized this year. The American Society for the control of Cancer is willing to co-operate with us as before, if the local societies give them assurance that the service offered this year on cancer of the breast was desirable. It is to be hoped that this assurance can be given.

JAMES STEVENSON,  
E. S. LAIN,  
FRANK H. MCGREGOR.



## REPORT OF COMMITTEE ON TUBERCULOSIS STUDY AND CONTROL

On account of the unusual financial conditions prevailing throughout the United States, there has been an increasing number of empty beds in private sanatoria, and an ever-lengthening waiting list for county and state institutions. This is true of Oklahoma. The two state sanatoria have long waiting lists and many people, who, under normal conditions might be cared for in private sanatoria, are now in line waiting for free beds. If conditions improve, the load the state sanatoria are now requested to carry will be reduced.

The above facts make it seem advisable for the state sanatoria to stress education for the patients occupying sanatorium beds and to place a time limit on the patient's stay in the sanatorium. We would suggest a maximum of twelve months unless special methods of treatment, which cannot be successfully carried out in the patient's home community, make it advisable for the patient to remain longer.

We would recommend that the sanatorium records should include not only a complete family history, but contain information as to housing conditions and family environment, and that these factors, especially contact with children, should be considered in the determination of the length of the time the patient should remain in the state sanatorium.

Close follow-up and careful cooperation with the family physician and local health agencies seems very desirable and should materially diminish the danger of contact. In the ultimate, this danger will depend very largely upon the success of the sanatorium staff in their efforts to give adequate education and training to the patient.

Since the estimated Indian population in the State of Oklahoma is approximately 100,000, and since the Indian is perhaps more susceptible to tuberculosis than the white population, we deem it wise to urge the members of the medical profession to be on guard with reference to tuberculosis in the Indian and to employ every possible means of making an early diagnosis in order that those suffering from this disease may be promptly committed to a sanatorium for treatment. This is highly important, because, on the average, the home environment of the Indian and his limited knowledge of preventive measures greatly increase the danger of contact.

The question as to whether or not the financial stress, with its associated influences, is causing an increased incidence of pulmonary tuberculosis is an interesting one. Certainly every physician should give serious attention to the influences of mental and physical strain, and inadequate nutrition when it exists.

L. J. MOORMAN,

F. P. BAKER,

D. W. GILLICK,

Committee.

## OPERATIVE TREATMENT FOR CORNS

Walter I. Galland, New York (Journal A. M. A., March 25, 1933), outlines an operation for painful corns which eliminates the pathologic

sources of irritation by removing the bursa and the exostosis underlying the corn. The operation causes a minimum of discomfort to the patient. It is as follows: The toe is anesthetized with a 2 per cent solution of procaine hydrochloride. It is most advisable to use a regional anesthesia administered at the base of the toe, so that the area of the corn will not be infiltrated with the anesthetic, as this renders the dissection of the bursa difficult. After the foot has been prepared, the keratinized epithelium is removed from the corn by means of a sharp curet. If the operator begins to dissect with the curet around the margins of the corn, he will be able to find a natural plane of cleavage between the keratinized and the normal skin, and the entire superficial structure of the corn can be removed en masse. The skin is again iodized, and the area of the corn is surrounded by a semielliptic incision outlining a flap with the base proximally placed. This flap is dissected carefully, so that it will include only the skin. The bursal structure underlying the flap will now be found overlying the interphalangeal joint and above the extensor tendons. The bursa is dissected and removed. The extensor tendons are now displaced laterally or medially, and the joint margins are inspected. The bony prominences can usually be easily delineated or can be found by digital inspection. The prominence is largely cartilaginous, because of the proximity to the joint structure, but also contains a considerable bony component. With a small chisel this tiny exostosis is removed, and the contiguous articular margins are smoothed out so as to present no irritating irregularities to underlie the skin. The wound is closed with silk sutures, which may be removed at the end of a week. The patients are usually able to walk about immediately after the operation, provided they wear a shoe liberally cut out. Some patients have sufficient pain to keep them off their feet one or two days.

## TEMPTS LAGGING APPETITES

The tendency to give milk to excess in post-operative and convalescent cases is apt to give the patient a feeling of revulsion. Yet milk is the one food for which there can be no effective substitute.

Modern physicians overcome this aversion to milk—this distaste for a steady milk diet—by flavoring it in a way that makes the color and taste interesting to the patient, yet does not alter the basic fundamentals of the milk itself.

Cocomalt, for example, converts milk into a delicious chocolate flavor food-drink that is tempting to the fussiest invalid. Even those who acutely dislike milk and refuse to drink it, welcome the refreshing flavor of Cocomalt. Not only does it tempt sick and lagging appetites by its palatability: Cocomalt substantially increases the nutritive value of milk. Every cup or glass of Cocomalt a patient drinks is equal in food-energy value to almost two cups or glasses of milk alone.

Furthermore, Cocomalt nourishes without taxing the digestion. It can be taken frequently even by the very sick. It is easily digested and quickly assimilated even by those whose digestive systems are impaired.

Cocomalt contains a rich supply of Sunshine Vitamin D and is accepted by the American Medical Association Committee on Foods.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**A Technique of Tubo-uterine Anastomosis (Implantation) in Interstitial and Isthmic Occlusion.** Ahmad Shafeek, Cairo, Egypt. *Surgery, Gynecology and Obstetrics*, April, 1933, Volume LVI, Number 4, Page 786.

This author has reviewed the technic of tubo-uterine anastomosis (implantation) in interstitial and isthmic occlusion of the tubes. He briefly summarizes the indications and contra-indications for the operation, and carefully outlines the procedure as employed in the hospital in Cairo, Egypt. He maintains that the careful dissection of the interstitial portion of the tube allows maintenance of the muscular integrity of the uterus. He feels that this is better gained than by incision, boring out or resection of the cornua. By implanting the tubes in the dissected tract of the old occluded portion, permanent continuity in its normal direction is better obtained.

He gives two theoretical disadvantages to methods of operation in which the tube is not implanted in its natural site:

1. The fertilized ovum is then implanted lower, and;
2. During periods of muscular atony the menstrual fluid may easily be regurgitated with consequent occurrence of pelvic endometriomata. Several hysterosalpingograms are included to demonstrate the integrity of the musculature of the cornua of the uterus and the patency of the tubes following operation.

**Comment:** The study and relief of cases of sterility has been greatly benefited and stimulated by the diagnostic procedures of tubal insufflation, hysterosalpingography, and the tremendous strides made in the field of endocrinology. It is only natural that there should be a new interest in the development of surgical procedures for the correction of tubal occlusion where this is a probable cause of sterility. Much good work is being done in this direction in recent years and the results are gradually improving. One must mention the technic of Sovak of New York, who has devised a means for coring out a tract in the cornua in which to place the patent tube.

With all of this interest in the surgical technic of correcting tubal occlusion, one must not forget that tubal patency is but one phase of the problem of sterility, and a careful, thorough investigation of both patient and consort must be made before it is justifiable to place the burden of proof upon tubal occlusion.

—Wendell Long.

**Appendicitis in Pregnancy.** William B. Marbury, M.D., Washington D. C. *The American Journal of Surgery*, March, 1933, Volume XIX, No. 3, Page 437.

This author reviews the difficulties of positive diagnosis of appendicitis during pregnancy, particularly in the last three months of pregnancy. He points out the fact that the cecum is carried high into the right upper quadrant as the uterus enlarges and that the diagnosis of appendicitis is made more difficult by its confusion with right upper quadrant diseases. This elevation of the cecum is also of importance in operations, particularly through a McBurney incision, because the appendix always lies somewhat higher and more laterally than is generally thought.

He also discusses the question of increased danger of peritonitis and advanced pregnancy because:

1. The upper abdomen with its greater absorption is involved.
2. The omentum and intestines are unable to wall off infected areas because of the motions of the heavy uterus and the displacement of the omentum and intestines.
3. The probability of abortion because of the increased irritation.

He also makes the observation that white blood counts are of relatively smaller importance during pregnancy, because counts of under 13,000 are of very little differential benefit. This, plus the changed position of the appendix, the ovarian and uterine pain sometimes encountered in pregnancy and gastro-intestinal symptoms seen in pregnancy, makes a positive diagnosis of appendicitis frequently almost impossible. Yet the importance of the removal of an inflamed appendix is so great that appendectomy must frequently be done in pregnancy upon more meager evidence than would be demanded at another time. This is particularly true in the last three months.

This author has collected a group of cases from the literature of appendicitis in the last three months of pregnancy showing that the errors in diagnosis are much greater and the mortality increased. This is very clearly explained upon the basis of the increasing difficulty of early diagnosis as the pregnancy advances.

He also points out that shortly after delivery the diagnosis of appendicitis is also quite difficult and the disease is usually termed "after pains" until rupture and peritonitis have taken place.

His chief pleas are for careful investigation of the possibility of appendicitis in all suggestive symptoms and appendectomy upon much more meager evidence than in the non-pregnant state.

**Comment:** This is a very important problem, because of its frequent occurrence, because of the dangers involved, and because of the difficulty of



absolute preoperative certainty, particularly in the last months of pregnancy.

It has been rightly contended by many excellent surgeons that the safe procedure in any suggestive case was early appendectomy.

—Wendell Long.

**Bartholin Cyst Excision Following Paraffin Injection.** Lionel S. Auster, M.D., New York City. *The American Journal of Surgery*, March, 1933, Volume XIX, No. 3, Page 509.

This author has outlined the surgical pathology of the Bartholin cyst, pointing out that it usually is a much larger cyst than is supposed on examination and that the complete operative removal, even under the best conditions, is far from a simple procedure.

His principal concern has been the fact that the walls of the cyst are thin and friable so that the cyst is ruptured frequently early in the procedure and complete removal of the remaining walls is thereby more difficult. In order to fill the cyst with a semi-solid material, which would make its dissection easier, he has withdrawn the contents of the cyst preoperatively and injected a solution of ordinary paraffin. This has somewhat solidified in the cyst and made removal a much simpler procedure, at the same time insuring better hemostasis and result.

**Comment:** Basing his idea of the difficulty of the excision of Bartholin cysts upon examinations alone, and before he has attempted this operation, one is inclined to look upon it as a very simple operation. Practically every intern, upon seeing his first Bartholin cyst, suggests that it may be removed in the out patient department under local anesthesia. Those with more experience know only too well that the inner margin of the cyst is in a deep cavity which is very vascular, and removal to be effective must be complete. Necessarily this involves the aids furnished by a good operating room, and even then suggestions such as expressed by the author of the above article are helpful.

—Wendell Long.

**The Fate of the Sidetracked Loop of Ileum Following Lateral Anastomosis for Complete Benign Obstruction.** C. E. Holm, M.D., Allentown, Pa. *Surgery, Gynecology and Obstetrics*, April, 1933, Volume LVI, No. 4, Page 746.

This author has reported on the fate of the sidetracked loop of ileum following lateral anastomosis for complete benign obstruction on the basis of two clinical cases and seven experimental cases in dogs.

In the two clinical cases, where the complete obstruction resulted from adhesions, lateral anastomoses were done without removal of the loop of ileum which was sidetracked. Following the anastomoses the patients developed diarrhea, borborygmus, abdominal distention, marked weight loss and debility without impairment of appetite. In each patient complete recovery followed resection of the sidetracked loop which was greatly elongated, markedly dilated and ulcerated.

Intestinal obstruction was produced in the terminal ileum in the dogs following which various types of lateral anastomoses were done allow-

ing the sidetracked loop to remain. After operation all the dogs developed diarrhea, borborygmus, distention, weight loss and debility, but maintained good appetite. Two dogs died from general peritonitis resulting from perforation of the sidetracked loop. The remaining five dogs at autopsy showed the sidetracked loop markedly elongated, and ulcerated. There were also super-superficial mucosal ulcerations of the ileum and colon, remote from the sidetracked loops and also wide spread advanced degenerative changes in liver and kidneys.

Surgeons generally recognize that it is not advisable to permit a blind end to extend beyond a side to side anastomosis. In any lateral anastomosis for permanent complete obstruction the sidetracked loop corresponds to a blind limb extending beyond the anastomosis.

With this clinical and experimental pathological data as to the fate of such sidetracked loops and the more distinct pathological changes, the author has good basis for recommending, wherever possible, resection of the sidetracked loop at time of lateral anastomosis, or, if not advisable because of the patient's condition, soon thereafter at a second stage operation on a more favorable occasion.

Where this cannot be done it is suggested that the ileum might be divided as close to the obstructive lesion as possible and be followed by an end to side anastomosis, thereby eliminating a blind end.

**Comment:** This article has to do with benign obstruction with sidetracking of a loop of bowel. This is very frequently a necessity in dealing with advanced intestinal neoplasms as well. In these situations it is frequently impossible to remove the sidetracked loop and the operation is done in the hope of relieving the obstruction. We know that these patients also have symptoms of enterocolitis and in such situations it is probably better to eliminate the blind end by dividing the ileum as close to the point of obstruction as possible and producing an end to side anastomosis. An alternate procedure is the production of a side to side anastomosis in this situation with as short a blind end as is technically possible.

—Wendell Long.

**Resuscitation (La Reanimation).** By Leon Binet, Professor of Physiology, Ecole de Medicine, Paris, *LaPresse Medicale*, February 22, 1933.

Referring to the efforts of the physiologist to bring experimental animals back to life, and especially to the frantic efforts of the physician in the presence of impending death (aux abois de la mort), Binet writes an instructive chapter, dedicated to a dead comrade and assistant, Albert Arnaudet, in which his efforts to solve the problem of resuscitation are presented.

As indicated by the author, death, in the last analysis, results from either failure of the heart or failure of the respiratory center. The subject is of tremendous interest to the surgeon because nothing can be more tragic than sudden, and often unexpected death from either cause.

Pointing out that through physiologic technique one is able to understand the movements of an arrested heart and impeded respiratory movements in an organism whose bulbar functions are singularly comprised, the results of experimental

work on heart failure is first presented, followed by a like consideration of respiratory failure.

I. It is possible to reanimate a heart that has ceased to beat (*Il est possible de reanimer un caeur arrete*) is the first proposition.

The classic experiments of A. Kuliabko has shown that the establishment of a circulation of warm oxygenated artificial serum through the heart taken from an animal dead for several hours will bring about rhythmic contractions.

Massage, repeated injections into one of the cavities of an immobile heart, the stimulation of the accelerator nerves, intracardiac injection of adrenalin and sometimes atropine are some of the experimental procedures heretofore employed.

It has been demonstrated that fragments of the embryonic heart of the chicken, cultivated aseptically upon coagulated plasmas, then nourished by embryonic juice in an oven at proper temperature, continue to live and grow, even for several weeks.

But if the contractions stop can they be made to re-appear? Binet, working with Jean Verne and Gabriel, has seen the re-appearance of contractions by putting the fragments into Locke-Ringer solution soon after contraction had stopped.

If fresh cultures of the fragments are submitted to a cardiac extract prepared from the sinus region in the right auricle after the technique of Demoor, contractions re-appear and last for one or two hours. Only the extract from right auricle, which is supposed to contain the cardiac hormone of L. Haberlandt, is effective.

Working with the heart of the edible snail (*escargot*) kept functioning by appropriate saline solution (see Locke-Ringer above) chloroform was added until contractions ceased. Various agents were used, after washing the specimen, in efforts to restore contractions, among them being adrenaline, sparteine, atropine, pilocarpine, caffeine and camphor. Only caffeine and camphor were particularly effective. The record made by thirty-five graphs showed truly remarkable results with these two agents.

The conclusion is that the heart of the snail, isolated from the organism and arrested by chloroform poisoning can be restored by the addition to the nourishing liquid of either caffeine or camphor.

II. A respiratory center gravely inhibited can resume a normal function in certain cases. (*Un centre respiratoire gravement inhibe peut reprendre, dans certains cas, un fonctionnement normal*).

Obviously, the first necessity in respiratory failure is artificial respiration, not only to combat asphyxia, but, by reflex action, to stimulate the respiratory center in the medulla.

One can, with advantage, associate with artificial respiration the inhalation of a mixture of oxygen and carbonic acid gas ( $O_2$  plus  $CO_2$ ) after the method of Yandell Henderson of Yale University but the author emphasizes the possibility of stimulating the respiratory center at the same time by the use of pharmacologic agents.

In this connection, Binet and his associates have experimented with fish. Because the gill is an admirable organ of absorption, and because of the unique arrangement of the cephalic circu-

lation, the fish makes an appropriate subject for tests of this character.

The fish are placed in a reservoir containing 200 c.c. of sea water per fish. To this is added a little sea water saturated with chloroform (*une petite quantite d'eau de mer chloroforme a saturation*). The fish quickly loses its equilibrium, turns on its back, and in from fifteen to twenty-five minutes respiration ceases. At this moment the fish are divided into two groups, one group being placed in ordinary sea water to which has been added a solution of caffeine 50 centigrammes per litre (approximately 1:1000).

Usually the fish in the first group remain inert. On the contrary, those in the second group begin to breathe in from one to three minutes—slowly and superficially at first, but quickly attaining normal rate and character so that after five or ten minutes they may be transferred to ordinary sea water where they survive indefinitely.

Other experiments were made in which fish were electrocuted by currents reaching them through wires attached to a marble container half filled with sea water in which they rested. The average survival of 50 controls was 19 minutes. The other group of 50 placed at once in caffeinated sea water had an average survival of five hours in 43, and definite survival in seven.

In some of the fish studied there was a breach (opening) in the pre-cordial region so that the heart could be observed. In no case was there any evidence of cardiac failure. Binet concludes, therefore, that the reanimation is due to a pharmacodynamic stimulation of the respiratory center by caffeine. This conclusion is strengthened by the following experiment: The detached head of the fish is placed in a litre of distilled water containing NaCl 8 grammes 2 centigrammes; KCl 36 centigrammes;  $CaCl_2$  17 centigrammes;  $MgCl_2$  .08 centigramme;  $NaHCO_3$  27 centigrammes;  $NaH_2PO_4$  .04 gramme; glucose 59 centigrammes and urea 4 grammes. This formula has a pH of 7.4. In the isolated head of the fish placed in it there is a survival of the respiratory center for 3 or 4 hours.

But if 20% of chloroform water, prepared as indicated above, is added there is more or less rapid failure of the respiratory center. Now the addition of the caffeine solution restores it instantly.

Again, the isolated head of the fish is perfused with the liquid indicated by formula above, but to which chloroform water has been added to the percentage already indicated. After fifteen minutes of perfusion respiration is totally arrested. Then a perfusion with the caffeine solution, and in three minutes respiration is begun; in ten minutes it is ample and frequent. This experiment can be repeated several times on the same head with the same results.

In a subsequent report made at a meeting of the Paris Academy of Medicine January 17, 1932, Binet stated that other agents, like cabeline, sparteine, camphor had been employed in the investigations, but were found to be entirely useless. Only caffeine gave definite results.

In making a translation of this important article by one of the world's greatest physiologists it seemed to me that a short abstract would not command sufficient attention. It may be that it will appear too long and tiresome, but I hope that the proximity will be excused by the import-



ance of the subject. After all, the value of muemotechnique must not be forgotten, and here I have tried to arrange it so that every one—research worker, internist, surgeon—who might be interested in the article may have a hook upon which to hang his memory. I might have said that Binet's experiments showed that only caffeine and camphor helped in the reanimation of an arrested heart; that only caffeine was of service in restoring respiration, and stopped there—but it would probably receive but scant notice, and give no help at all to those wishing to verify the reported experimental results.

The article ends with the following striking paragraph:

"The problem of resuscitation is not an empty problem. Experiment permits us to emphasize its scope. Men of action—physician and surgeon—will perhaps be able to apply a rational treatment at a moment where it is difficult to say whether the patient is with the dead or still with the living. There is nothing to lose. There is, perhaps, something to gain." (Le probleme de la reanimation n'est pas un probleme vide de sens: l' experimentation permet d' en souligner la portee. Hommes d'action, medecin et chirurgien pourraient peut-etre appliquer systematiquement un traitement rationnel a un moment ou il est difficile de dire si le patient est "avec les morts ou encore avec les vivants\*\*\*." Il n'y a rien a perdre. Il y a peut-etre quelque chose a gagner).

—LeRoy Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
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An Estimate of the Value of Urethrogram and Cystogram in the Diagnosis of Prostatic Obstruction. Crabtree and Brodney, *Journal Urology*, March, 1933.

The authors explain their technic of cystogram and urethrogram, using 3% sodium iodide solution, and state that the large gland type can be determined with the greatest of accuracy by these methods from the small gland type. The cystograms show three major variations from the normal: (1) filling defect of the bladder base; (2) elevation of the bladder above the symphysis; (3) asymmetry of the bladder base as shown by irregularity of the curve. The urethrogram in large gland type shows increased length of the prostatic urethra from the veru impression to the internal orifice, narrowing or flattening of the prostatic lumen, irregularity of the prostatic lumen and deviation from the midline. The small type gland will deform a smaller portion of the bladder base line, the elevation of the internal orifice is less extensive, and the width of the curve deformity is less pronounced. In the small gland type the oblique cystogram will give little evidence of a post prostatic cul de sac. They are convinced with the need of departure from a routine attempt to handle all prostatic obstruction by one operative procedure, whether it be perineal, suprapubic or transurethral, and that the ideal situation is reached when after accurate diagnosis of the disease factors a procedure adequate to produce lasting relief is applied. They state that cystograms made preoperatively dur-

ing the stage of congestion, after the subsidence of congestion, immediately postoperative, and remotely postoperative are very instructive.

Critical Study of Ureteral Calculi. A Ravich, *Journal Urology*, February, 1933.

The author very ably discusses the different etiological theories as to the formation of urinary calculi. In summary he states "of all the etiological theories that have been advanced, urinary stasis seems to be the only constant factor necessary for a stone to form in the urinary passages." The chemical character of the stone seems to depend on the pH of the urine, which may change from time to time and accounts for the different lamina often seen. Calculi seem to form when as a result of urinary stagnation some change occurs in the secretory function of the tubular epithelium causing coalescence or diminution of the protective colloids and consequent precipitation of the unattached crystalloids. Trauma, faulty diet, infection and foreign bodies are often contributive factors in the presence of stasis.

A two to one ratio of ureteral calculi in males and the 80% incidence in adults of twenty-one to fifty years of age corresponds with the incidence of inflammatory conditions of the adnexa in males and females. 393 prostatic examinations were recorded in 758 cases of both sexes and only 82 or 21 per cent had what appeared to be normal prostates or seminal vesicles. 69.8% of his cases were males, 30.2 per cent females. X-ray examination was positive in 90%. 83.6% required cystoscopic manipulation, 6.3% passed their calculi spontaneously, 11.2% were operated without a single mortality. 3.4% had recurrence, chiefly in those who refused follow-up treatment by ureteral dilation.

The Prevention of Cardio-Vascular Syphilis, M. J. Exner, New York, N. Y., *Texas State Journal of Medicine*, March, 1933.

The author concludes by stating that heart disease is the malady of highest mortality, killing annually more than twice as many as the next most killing disease, pneumonia. 15% of heart lesions are luetic. The other two principal causes of heart disease are rheumatism and arteriosclerosis. The exact causes of rheumatism and arteriosclerosis are unknown, and no specific remedy or scheme of treatment for it has as yet been discovered for its control. In syphilis we have a more hopeful picture. The specific cause of syphilis is known, we have effective remedies and technics of treatment for arresting the disease in its earliest stages, we have reasonably sure tests to supplement characteristic signs in the diagnosis of the disease. If early and adequate treatment can be instituted, serious cardio-vascular lesions can be definitely prevented in almost all cases.

Chronic Prostatitis. Sangree and Phillips, Philadelphia. *Pennsylvania Medical Journal*, March, 1933, Page 397.

The authors quote Pelouze in saying that 72% of all males presenting focal infective symptoms, and 35% of all males beyond the age of thirty-five years have a definite infection of the pros-

tate gland. A single examination yielding a secretion of normal cell count (1 to 5 cells, Von Lackum) does not eliminate the prostate as a focus in suspected individuals. At least three examinations spaced each three days apart should be made. In summary they state: (1) Chronic prostatitis is present in a large percentage of men, of whom no history of gonorrheal infection is given. (2.) Multiple foci are commonly associated with prostatitis. (3.) The most frequent of these are the teeth and tonsils. The sinuses and gall bladder come next. (4.) The amount of pus in the prostatic secretion bears no relation to the severity of the systemic disease. (5.) Cystoscopy will often aid in eliminating other sources of infection in G. U. tract.

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### INTERNAL MEDICINE

Edited by  
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EDITOR'S NOTE: Dr. Mann of the Mayo Clinic has shown the dependability of normal liver function for maintenance of normal blood sugar. It seems highly probable that the extreme instability of blood sugar levels may be due to impairment of glycogen and glycogenolytic function of the liver. Glucose tolerance tests, according to the method of Althausen and Gunther, to determine the metabolic activity of the liver would be of interest in this case. Although the authors report a normal appearing liver at the time of the operation there may well have been a disturbance of function of this organ which would permit an over activity of the insulin secreting cells.

**Pathology of the Liver and Their Clinical Application.** By Ferdinand C. Helwig, M.D., Kansas City, Missouri. The American Journal of Surgery, No. 3, Volume 19, Page 462.

The following is an abstract from the summary of the recent work on the anatomy, physiology, chemical pathology, protein metabolism and bile studies summarized in Dr. Helwig's article.

Recent advances show, contrary to the old idea, that the portal blood flow is controlled largely by nerves outside the liver; hence, the latter has no direct influence over the blood entering it, which fact may be of considerable clinical importance in certain pathological alterations in the liver.

McIndoe and Counsellor demonstrated that the liver has a bilateral nature which may be of significance in explaining the pathogenesis of certain lesions confined to one or the other half of the liver. They showed that the right and left branches of the portal vein remain separate, likewise, the right and left bile ducts and the hepatic arteries.

Copher and Dick demonstrated what they called "stream lines." The portal blood collected from the stomach and spleen is found to pass to the left lobe of the liver; a second stream, or that blood collected from the upper part of the duodenum, head of the pancreas and jejunum, passed to the right lobe; while a third stream, whose blood arose from the colon was distributed to all parts of the liver, more particularly to the left lobe. Moreover, they found there was little or no intermingling of these three streams.

Mann's work on the effect of total extirpation of the liver may be summarized as follows: Im-

mediately after the liver is removed (from dogs) muscular weakness of the muscles, except those necessary for respiration, develops coincident with a decrease in and subsequent loss of reflexes. Within an hour there is profound relaxation. After a variable period, muscular twichings appear, then general convulsions in one of which the animal dies. Studies of the blood in these dogs show a progressive decrease in sugar, the appearance and progressive increase of a pigment, and a progressive increase in uric acid. It was found that there was always a decrease in sugar after a total removal of the liver and, after convulsions set in, the blood sugar fell very rapidly and this constant relationship between blood sugar levels and clinical symptoms always occurred; however, by the administration of intravenous glucose he was able to completely restore the dying animal to a normal condition. As soon as the administered glucose was burned up the dog lapsed into the same state of hypoglycemia from which they could be restored numerous times. At last, after numerous revivals, the animal would reach the stage where sugar injections were of no avail.

When the pancreas was removed in the dog, the animal developed a high blood sugar and died in several days with hyperglycemia. If the pancreas and liver were removed at the same time the result was the same as if the liver alone was removed. These experiments proved that the liver alone was responsible for the maintenance of the blood sugar level, even in the hyperglycemia of diabetes.

Furthermore, he showed that no matter how much glycogen was present in the muscles it in no way influenced the development of hyperglycemia since it evidently could not be utilized for the maintenance of normal blood sugar level. Hence, the liver glycogen alone comprised and was present as the blood sugar. These with other experiments proved that the liver is not necessary for the production of the hyperglycemia action of insulin, that its presence is absolutely necessary for a permanent reactivity of the blood sugar level, and this did not mean that the liver played no part in the production of the hypoglycemia of insulin. However, the fact that the liver is essential for the restoration of normal blood sugar level proved that the liver is affected either directly or indirectly by insulin.

With regard to protein metabolism in total hepatectomy it was shown that the liver is the sole source of urea formation, since in the liverless dog a striking and progressive decrease of urea in the urine developed. It was definitely proved that both urea formation and deamidization of aminoacids are functions of the liver.

Working with McIndoe, Mann also showed that in the liverless dog, bile was readily produced and increased progressively, which was also true in the dehepated, spleenless animal. This was true if the gastrointestinal tract was removed and he was able to conclude that the origin of bile was to be found in the bone marrow.

After much experimentation he concluded that the evidence for the liver being the site of formation of fibrinogen is not conclusive but that injury or removal of the liver does actually affect the formation of normal blood clot.

Obstruction to the outflow of bile is a time-honored experimental procedure. It was found that animals so treated, which usually died after



a few weeks, could be kept alive for many months by merely regulating their diet. They were given a diet high in carbohydrates, while the feeding of meat usually killed them.

The work of Graham and Cole is cited who used isoidokon for not only gall-bladder visualization but also as a test of the excretory function of the liver. The other liver function test cited is the galactose method.

A summary of the therapeutic suggestions as a result of recent work by Ravdin emphasizes that morphine should not be given in cases where there is a disease of the liver, because of its tendency to produce hyperglycemia and deplete the liver glycogen. Bollman has shown that the detoxifying action of the liver is enhanced when it is filled with glycogen. Therefore, a high diet of carbohydrates should be considered in all cases of preoperative preparation with diseased liver. Elimination of proteins may be indicated in cases of cirrhosis and calcium should be administered to the patient, with or without jaundice, who is suspected of having liver damage, or in whom such a possibility may transpire.

Helwig emphasizes that prevention of the so-called "liver deaths" may be possibly brought about through careful liver function tests, the preoperative administration of glucose and the post-operative use of calcium.

**Modification of the Dextrose Tolerance Test as an Index of Metabolic Activity of the Liver**, by T. L. Althausen, M.D., Lewis Gunther, M.D., John B. Lagen, M.D., and William J. Kerr, M.D., San Francisco. *Archives of Internal Medicine*, No. 3, Volume 46, Page 482.

The method described by the authors is as follows: In the morning, with the patient fasting, a specimen of blood is taken for sugar determination followed by an injection of 20 units of insulin. Twenty minutes later, 50 gm. of dextrose dissolved in 500 c.c. of water is given to the patient by mouth followed by 1000 c.c. of water also administered by mouth. After this two samples of blood were taken at intervals of thirty minutes and two more at intervals of one hour.

Rarely insulin reactions develop during the test and when this did occur the last sample of blood is taken at the time of the reaction regardless of schedule, and the patient is treated for hypoglycemia in the usual way.

Abnormal type blood sugar curves which indicate definite liver pathology were noted. The first type of curve is characterized by a moderate elevation of the blood sugar at the end of the first and second thirty minute periods rising in some instances to 220 mg. but always followed by a return to the normal or subnormal at the end of two hours. At the end of three hours when the test was positive the blood sugar would fall to a point between 40 and 80 mg.

The second type of blood sugar curve was characterized by a progressively increasing hypoglycemia. As an example the reading would be at the end of thirty minutes, one hour, two hours and three hours, 80 mg., 70 mg., 40 mg., and 25 mg., respectively.

The test was distinctly positive in all the cases of early cirrhosis, syphilitic cirrhosis, portal cirrhosis, in cases of metastatic carcinoma of the liver or arsphenamine jaundice, echinococcus cyst of the liver, myeloid leukemia and negative in cases of toxic cirrhosis and many control cases.

This test paralleled the Rose Bengal test.

The test possesses the following advantages: (a) It is simple and requires no special equipment. (b) It is harmless to the patient. (c) Unlike the levulose and galactose tolerance test, it is reliable not only in disease groups but also in individual cases. (d) It brings out latent functional impairment of the liver and permits one to follow the progress of the disease. (e) As a metabolic test, its results are probably independent of biliary obstruction. (f) In combination with a dye excretion test, it offers valuable diagnostic aid in toxic cirrhosis of the liver.

**Hypoglycemic Convulsions with Hypoplasia of the Pancreas**, by H. M. Winans, M.D., Professor Medicine, Baylor University, Dallas, Texas. *The American Journal of the Medical Sciences*, No. 733, Volume CLXXV, No. 4, Page 500, April, 1933 issue.

Dr. Winans reports a case of a woman, aged 30, who had convulsions practically every night lasting from ten to thirty minutes. Her past history was relevant in that at the age of thirteen she became overheated and was sick for several weeks. Following a right ovariectomy at the age of fifteen she had "nervous spells" and uncontrolled jerking of the arms and legs. Her menstrual periods had always been scant but regular. Following the birth of a second child she developed a mastitis and "blank spells" followed by periods of weakness occurring at night and one attack of stupor lasting for fifty-two hours. Subsequently she developed severe convulsions with clonic spasms, headache, drowsiness and ataxic movements of the hands and feet. On a high carbohydrate diet she gained 46 pounds in weight. Except for obesity there was no abnormalities.

**Physical Findings:** The laboratory findings were negative except for the marked hypoglycemia. The minimum finding was 42 mg., the maximum was 55 mg. It was necessary to use glucose every three hours in order to prevent the symptoms from developing.

An exploratory operation revealed a normal pancreas. A high carbohydrate diet did not always prevent the development of symptoms, however an injection of obstetrical pituitrin produced improvement which lasted three to five hours.

**Discussion:** The possibility of over production of insulin, the possibility of hypoglycemia due to endocrine disturbances and disturbances in the balance between the external and internal secretions of the pancreas were considered. He suggested that the hypoglycemia may be due to a disturbance between the internal and external secretions of the pancreas with a loss of the inhibiting effect of trypsin upon insulin.

## BOOK REVIEWS

**International Clinics.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest, by leading members of the medical profession throughout the world. Edited by Louis Hamman, M.D., Visiting Physician, Johns Hopkins Hospital, Baltimore, and many other outstanding medical authorities. Volume 1, Forty-third Series, March, 1933. 305 pages, 16 illustrations, 1 colored plate. Cloth, \$3.00. J. B. Lippincott Company, Philadelphia, Montreal and London.

The International Clinics, for many years, a standby to the general medical profession, for the specialist or general practitioner, is coming out now under new editorship. Among the useful articles in this volume is that by Bloomfield, of Stanford University, who discusses "The Indications for the Use of Special Tests By The Practitioner." He notes that physicians today often prepare special tests which are so commonly performed and so widely advanced, which in his opinion are often superfluous, sometimes misleading, and unnecessary, and that they are not

to be used indiscriminately, that the routine use of them is unwarranted and even ridiculous.

Wolferth and Margolies contribute "Gallop Rhythm of the Heart."

"Treatment of Burns," is described by Penick.

Burnam, the radiologist, reviews the various diseases for which radium treatment has been given and attempts to set forth the valuable benefits from the use of radium as a therapeutic.

"Bromide Poisoning," is also considered. While this condition is rare it should not be forgotten by the practitioner.

Woods contributes an article, "Tuberculosis of the Eye," and is of the opinion that it is far more common than was formerly thought.

Dean Lewis and Penick, present "Fecal Fistulae."

There is a splendid article by Blaylock on "Shock." This of course is of outstanding value to every practitioner.

Neurological conditions are presented by Ford and Morgan. Ford presents an article on the "Diagnosis and Significance of Tremor."

There is also a report of "Clinical Pathologic Conference," at Johns Hopkins Hospital, presented by Hamman and Rich.

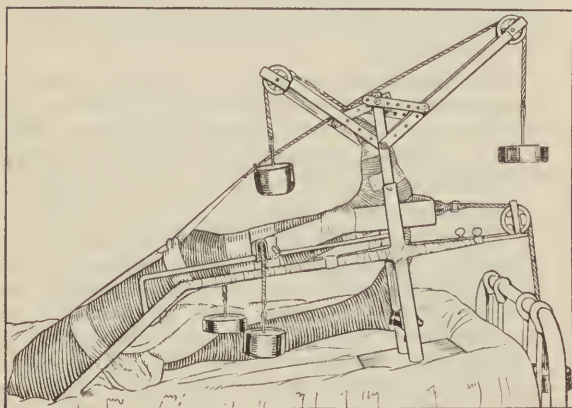
This issue is more than fully up to standard than previous issues of the International Clinics.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, March 14th and 15th, 1933.  
The following applicants passed:

NAME	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Daigle, L. Stanley (col.)	1903	Brusly, La.	Meharry Med. Col.	1931	Oklmulgee, Okla.
Jenkins, Byron Arthur	1901	Kentucky	Univ. Louisville	1925	Durant, Okla.
Kaiser, George Louis	1903	Natchez, Miss.	Creighton Med.	1929	Hugo, Okla.
Livingston, Lawrence G.	1905	Mt. Grove, Mo.	Washington Med.	1930	Cordell, Okla.
Pierce, James Lovick	1886	Honey Grove, Tex.	Baylor Med.	1916	Marlow, Okla.
Crane, Clyde Winthrop	1878	Detroit, Mich.	Ohio Med. Col.	1906	Oklahoma City
Childs, Darwin Bryan	1906	Noble, Okla.	Univ of Tenn.	1931	Tulsa, Okla.
Dorrell, Green Berry	1862	Lawrence, Mo.	Bellevue Med.	1889	Chandler, Okla.

## THE G. LANGE SUSPENSION FRAME



This frame has been greatly modified and improved over other well known frames for use in fractures of the leg and femur. Made entirely of aluminum, it weighs only six pounds, fits snugly in the bed and has five four pound weights and five two pound weights, and necessary cords for attachment of same. Of course, if greater weight should be needed sand bags may be attached in addition to the weights. It also has the advantage of having lateral attachments by which lateral displacements may be overcome. In addition to these advantages it has an attachment which when applied will overcome foot-drop, a complication often resulting in fracture of the leg.

It is manufactured by the Muskogee Artificial Limb and Appliance Company, Memorial Station, Muskogee, Oklahoma. The writer and several other surgeons have used this and similar contrivances to great advantage in fractures of the leg.



## HOSPITAL INSURANCE AND MEDICAL CARE

In times of sickness and misfortune, charlatans flourish. The desperate man grasps at any straw and is ready to try any scheme that offers something for nothing or more for less than its costs. As is revealed by the report of the Council on Medical Education and Hospitals elsewhere in this issue, there are in this country 6,562 hospitals with more than a million beds. More than 200,000 of these beds are not occupied. This is no doubt largely a reflection of the current economic situation. It is unquestionably associated with the fact that the government hospitalized gratis large numbers of veterans who suffer from non-service connected disabilities and who were well able to pay for hospital care. The failure of occupancy of these beds represents a serious situation to the hospitals. Fortunately, an order has already gone forth ordering admission for the present at least of emergency cases only. Moreover, the current economic situation has thrown into medical service a considerable number of business men who see in various insurance and other commercial medical schemes an opportunity for recouping fortunes lost through other business ventures. They are perhaps stimulated to entrance into the medical field by the unusual attention focused on this problem by the publicity given to the reports of various committees and commissions during recent years. It is unfortunate that lay and medical organizations in many cities were urged by the publicity director of the Committee on the Costs of Medical Care to embark on half-baked experiments in changing the nature of medical practice.

In many communities, hospital insurance schemes have been developed which are offered as exceptional opportunities to great numbers of people to protect themselves against unanticipated hospital bills. The Bureau of Medical Economics of the American Medical Association has analyzed many such schemes, and reprints are available of these analyses as they have appeared in *The Journal*. The Council on Community Relations and Administrative Practice of the American Hospital Association has recently analyzed various periodic payment plans for the purchase of hospital care, sometimes called group hospitalization, and has apparently given its approval to such plans, subject, however, to certain restrictions.

The medical profession hesitates to approve any such plan because these plans fail to provide for complete participation of most if not all the recognized hospitals in the community, complete participation of the reputable physicians of the community and, associated with this, free choice of physician by the patient and free choice of hospital under the policy. The most important ingredient in medical care is the personal attention of a competent physician. The committee of the hospital association recognizes the necessity for having patients admitted on the recommendation of their own physicians and cared for by their own physicians. They feel that such plans should not disturb any arrangement for the payment of fees between physician and patient or in any way disturb the preexisting normal relationship between the doctor and those he serves. Emphasis is placed on the fact that it is the hospital bill which forms the chief difficulty for patients in the current financial situation.

The Journal has repeatedly emphasized the danger of exploitation of such plans by commercial interests which charge excessively for selling the service or promoting it and which frequently have insufficient financial backing to carry responsibility. The patient and the physician who may be involved in such schemes should realize that the clauses in fine print which limit the number of conditions covered by the policy, which limit the term of stay of the patient in the hospital and which otherwise tend to invalidate the policy demand most careful consideration. The committee of the hospital association recommends that the direction of activities in all such schemes should remain in the hands of a nonprofit organization representing the hospitals and should never be transferred to any business agency. One of the chief menaces to medicine under such plans is the incitement to solicitation for patients and competitive underbidding.

Today all such plans are in an experimental stage. Their consideration demands the most careful attention of the most astute minds available in both the medical and the hospital fields. These schemes are fraught with danger in placing hospitals on a competitive basis for patients, offering service at prices lower than warranted with subsequent skimping of the service, and, most serious of all, disruption of medical organization and of the whole institution of medicine. That institution has an enviable record of thousands of years of service to the public. Economic depressions have come and gone many times in the history of the world. The present predicament should not be permitted to destroy or disrupt institutions that have stood the test of time. —*Jour. A.M.A.*, March 25, 1933.

## CONDITION SIMULATING HUMAN SCLERODERMA IN RATS INJECTED WITH PARATHYROID HORMONE

In the course of the collection of experimental data on rats injected with parathyroid, Hans Selye, Baltimore (*Journal A. M. A.*, July 9, 1932), noted that young suckling rats receiving in some cases only a single injection of 5 units of parathyroid extract intraperitoneally develop within some days a specific skin disease. This condition presents itself first as a hardening of the skin on the back, extending bilaterally from the head to the lower border of the rib. Within two or three days the hair over these areas begins to fall out and concomitant with these phenomena the skin becomes harder and thicker. Ulceration of these symmetrically arranged affected areas takes place in some parts, and finally after healing a bare, hairless, atrophic skin results. This condition in rats possesses striking points of similarity with the human diseases known as scleroderma and sclerodactylia, in which conditions there occurs a connective tissue hypertrophy in the skin, likewise mostly in symmetrical distribution, together with degeneration of this hypertrophied connective tissue and ulceration of the affected areas. Finally healing results in the atrophic skin over these rats. The author's report offers further substantiation for the concept that hyperparathyroidism is related to scleroderma.

## OFFICERS OF COUNTY SOCIETIES, 1933

COUNTY	PRESIDENT	SECRETARY
Adair.....		E. P. Greene, Westville
Alfalfa.....	H. E. Huston, Cherokee	L. T. Lancaster, Cherokee
Atoka-Coal.....	J. S. Fulton, Atoka	C. C. Gardner, Atoka
Beckham.....	V. C. Tisdal, Elk City	C. F. Jones, Erick
Blaine.....	T. A. Hill, Watonga	W. F. Griffin, Watonga
Bryan.....	W. A. Houser, Durant	J. T. Wharton, Durant
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Choctaw.....	H. L. Boyer, Ft. Towson	R. J. Shull, Hugo
Cleveland.....	Carl T. Steen, Norman	D. G. Willard, Norman
Coal (See Atoka).		
Comanche.....	T. R. Lutner, Lawton	E. Brent Mitchell, Lawton
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Okfuskee.....	C. M. Cochran, Okemah	C. M. Bloss, Okemah
Oklahoma.....	LeRoy Long, Oklahoma City	Bert F. Keltz, Oklahoma City
Okmulgee.....	I. W. Bollinger, Henryetta	M. B. Glismann, Okmulgee
Osage.....	C. H. Guild, Shidler	M. E. Rust, Pawhuska
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Pawnee.....		
Payne.....	D. J. Herrington, Cushing	Emmett O. Martin, Cushing
Pittsburg.....	W. C. Wait, McAlester	L. C. Kuyrkendall, McAlester
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Stephens.....	C. N. Talley, Marlow	D. Long, Duncan
Texas.....	Wm. J. Risen, Hooker	R. B. Hayes, Guymon
Tillman.....		J. D. Reynolds, Frederick
Tulsa.....	Chas. H. Haralson, Tulsa	Carl F. Simpson, Tulsa
Wagoner.....		John D. Leonard, Wagoner
Washington.....	F. S. Etter, Bartlesville	J. V. Athey, Bartlesville
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Woodward.....		C. E. Williams, Woodward

NOTE—Corrections and additions to the above list will be cheerfully accepted.



# THE JOURNAL

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## HONORS AND SCARS\*

T. H. McCARLEY, A.B., M.D., F.A.C.P.  
McALESTER

To every man, whether he be of low or high estate, there are outstanding occasions which are landmarks along the way of his life. These are unforgettable incidents to which other events of less importance are related and from which they are dated. Childhood, youth and the years of maturity are studded with these markers. One may be the attainment of a long sought goal with all the happiness that accompanies the accomplishment of a worthy purpose: another, on the contrary, may be a profound sorrow with its all but crushing effects: still another may be the reception of an unsought but distinctive honor with all its attending glamour and halo. Such an honor came to me in being elected President of the Oklahoma State Medical Association. For according me, an humble practitioner of the healing art, this tribute, I feel and express my sincere gratitude and appreciation.

But I would not be content, buoyed by the depths of this honor, to rest on my oars and drift along in blissful enjoyment of your felicitations. I think that "The King of the Roycrofters" never made a more striking statement than this: "God will not look you over for medals, diplomas and degrees, but for scars." With the present day, rapid fire changes in social, economic and governmental conditions, which necessarily affect medical practice, there are conflicts in which we, as men of organized medicine must engage, that will leave their scars.

To the master minds of memorable, medical men, belongs the credit for discerning through persistent, painstaking effort—sometimes heroic sacrifice—the cause, prevention and cure of many physical and psychic ills. We, as clinicians,

make daily use of the knowledge thus acquired. While some diseases, notably cancer, cardio-vascular diseases and pneumonia, still rank almost as high as ever in mortality percentage, we are encouraged to believe that these, too, will fall victims to scientific research. This faith is warranted by the success achieved against others that seemed equally as difficult. Witness our confidence today in the presence of pellagra, pernicious anemia and diabetes as compared with that of yesterday. One of the ever present problems is to get the benefits of medical knowledge to all who need it. The Utopian condition of medical practice would be, from the standpoint of the public, availability of scientific medical care to every man, woman and child the nation over: and from the standpoint of the medical profession, adequate compensation for rendering this service. That these conditions do not obtain is responsible, in a general way, for the present day agitation as to state medicine, commercialized health insurance and contract practice.

We cannot deny that adequate medical service is not available to a large per cent of our population, neither can we deny that many physicians are receiving barely enough income on which to subsist. When a laborer at a saw mill receives only \$1.00 per day as wages, has .40 checked off for house rent and .20 for workmen's compensation insurance, obviously he cannot pay for medical attention to his family. To meet the demands of mining and lumber camps and other similar groups of industrial employees, contract service may be a necessity. But when the same system reaches out to apply to our citizenship in general, regardless of individual ability to pay and accessibility to capable doctors in independent practice, it becomes an octopus to strangle the initiative, aspiration and success of the individual doctor. The Dallas County Medical Society has very advisedly taken an advanced step with reference to this matter by adopting the following amendment to their

\*President's Address Forty-first Annual Session, Oklahoma City, May 15, 16, 17, 1933.

by-laws: "No member or combination of members shall either directly or indirectly enter into contracts or agreements to render professional service under the system known as "contract practice" except in situations wherein the needed medical and surgical services cannot otherwise be obtained." This amendment was upheld by the Texas State Medical Association and by the Judicial Council of the American Medical Association.

Closely allied to contract practice is commercialized health insurance. Such health and accident insurance as gives the assured free choice of physician and surgeon should be endorsed and encouraged. But when insurance companies extend their contracts to provide that the assured shall be treated by doctors whom they specify or employ, there is a violation of a principle for which we must stand; viz., freedom of choice of physician.

This is no straw man that I am visualizing. The Iowa plan, under the county contracts with the county medical society for the care of the indigent sick, has been adopted by county medical societies in a number of states. This plan seems to have the least obnoxious features. From this are graded downward numerous insurance and contract schemes, some of which are fostered by sensational and misleading advertising and have no professional control whatever.

I would recommend that our state society have a committee to study all such social schemes and report its opinions. The publication of its findings in our Journal would serve to keep us advised as to developments along these lines, consequently prepared to use our influence more effectively.

The committee on the cost of medical care, after five years of study and investigation, has adduced very interesting and valuable data. I would urge that every doctor in the state read and ponder at least the summary of these reports as given in the Journal A.M.A., of December 3, 1932. The recommendations of both the majority and the minority are food for thought. The majority report contains surprising recommendations, particularly with reference to "a basic change in the system of providing medical care for the people of the United States." While I cannot accept this advice as sane and desirable for the welfare of either the public or our profession, I think the committee

has done a fine thing in bringing this idea out in the open where its merits and demerits will receive free and full discussion and consideration. I am in full accord with the first minority report.

Certain basic principles that are significant in relation to the final report of the committee on the cost of medical care, have been so well stated by Dr. William Allen Pusey, that I am pleased to quote them.

"The good of society must be the sole aim of its (medicine's) public policies and the good of the patient the first consideration in the relations between physicians and patients

Experience has shown that the vast majority of disease conditions afflicting man can be most satisfactorily and economically diagnosed and treated by a competent, individual, general practitioner.

Medicine's chief concern must be for the individual physician: the service rendered by individual physicians in the aggregate, constitutes the great bulk of medical service. The quality of service which is given depends on the competency of the individual physicians who give it.

The medical profession asks a career of independence under conditions of free and dignified competition.

In its ideas of independence, medicine has a right to control its own affairs. Its history of capacity to do so and altruism justifies this claim."

However, I hasten to add that it will not do for organized medicine to be content merely to say "We oppose all forms of state medicine, contract and industrial practice." The experience of certain European countries in which state medicine was precipitated without the counsel or consent of the medical profession, teaches us to be if not the staying hand, at least the guiding hand in its projection.

Since the questions raised and many others must be answered not by the individual doctor but by doctors speaking through our association, let us consider for a few minutes the efficiency of our organization. The vital, indispensable unit is the county medical society. It is to be regretted that during the past few years many of our county medical societies have not been all that they should be or may have been in previous years. The causes of this are many and varied. In some in-



stances, hospital staff meetings and academies of medicine and surgery have detracted from county society activities. The fact that remuneration at this time is less than we have been accustomed to receive makes it easy for us to be slothful and lose zest in professional advancement. Shortage of money necessitates fewer post-graduate courses and less frequent attendance at distant medical meetings. But it is my opinion that the most usual cause of lack of interest in and poor attendance at county medical society meetings is failure to provide interesting scientific programs. Doctors will make the effort to attend a meeting that promises an interesting and instructive program.

Hospital staffs and academies of the specialties have their places, but they shouldn't be thought of as in any way taking the place of the county society. Questions of policy affecting the profession and the public must find their answers through the regular channels of organized medicine, of which the county society is the primary component. Realizing all these conditions, our state association has been alert in doing some things to help the county societies. Collaborating with the Extension Department of our State University, moving picture films showing subjects of medical and surgical interest have been made available for county society programs and post-graduate courses have been provided. A further service is now ready in the way of a list of speakers with their subjects to be had for use at county meetings. It is hoped that, especially in those places where interest has lagged, advantage will be taken of the talent offered through the bulletin which will be in the hands of every secretary. Most of the programs of the county should be furnished by its own members, but an occasional number by a man from a neighboring county should have a stimulating influence. It was to provide just such a haven that this service was arranged under the administration of our retiring president. It will be my privilege to observe what I believe will be its successful operation.

It seems to me that it is worthwhile, now and then for us, the doctor of Oklahoma, to be reminded of what our state association is doing for us through the secretary-editor, councillors and various committees. I have just pointed out some of the activities of the committees on post-

graduate extension teaching. By way of further illustration, note the committee on public policy and legislation. As watchdogs, they have sounded the alarm and led the attack against portending legislation inimical to the public health. They have supported, so far as was possible, sane and sensible laws affecting the public health. It has seemed impossible so far to get favorable legislative action on certain matters that former presidents of this society and others have advocated. Among them are: (1) a law requiring a county coroner. (2) a medical lien law. This, in brief, provides a plan whereby a physician, dentist, nurse or hospital that treats a patient who has been injured through the fault of another person and who by reason of that injury has a claim against that person for damages or a claim for benefits under an accident insurance policy, may give notice of that claim to the person responsible for the injury or to the insurance company and file a notice of it in the office of the clerk of the county court, and by so doing, render the responsible person or the insurance company liable for the payment of the bill for professional and hospital services out of any money due the patient on account of his injuries. There is a crying need for this, since our smaller hospitals are being bankrupt by the irresponsible victims of automobile accidents. (3) A basic science law, the gist of which is that every applicant for license to practice a healing art of any nature must first pass an examination in the basic sciences.

It is then evident that ours should be a militant organization. You may ask whence will come the wounds and consequent scars from attacking such propositions. The answer is, from an unsympathetic public, from the cults and charlatans and from a small minority of our own profession. "He laughs at scars who never felt a wound." We have not striven for a medical practice act that would protect the public from incompetent practitioners without having our efforts ascribed to selfish and ulterior motives. The splendid rating of certain of our medical institutions has been saved by the self-sacrificing behavior of one or more of the outstanding members of our profession. Turning thumbs down on such sharp practices as the secret division of surgical fees has provoked the animosity of the few engaged in this practice. The iniquities of

contract practice and commercial health insurance at this moment challenge us.

Every day has its problems for each of us to solve in personal, individual medical and surgical practice: likewise, every day has its problems for us as a brotherhood to solve. It is to some of the things that we together must consider that I have called your attention. If we shall be aggressive in meeting them, faithful to principles of lasting value in working them out, the results may show evidence of a scrimmage, but the scars will be a passport to our own self-esteem and that of our fellow-men.

—o—

#### PABLUM—MEAD'S PRE-COOKED CEREAL

Mead Johnson & Co., are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream and sugar may be added as desired.

Mothers will cooperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. Please send for samples to Mead Johnson and Co., Evansville, Ind.

—o—

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Fatigue and general debility indicate conditions that generally can be corrected by proper diet and rest.

Proper diet means adequate, well-balanced nourishment. Not over-eating, for that disturbs digestion, causes sleeplessness and further complicates the condition.

Cocomalt mixed with milk provides the varied nourishment of a well-balanced meal without the slightest digestive strain. Its high caloric value and easy digestibility make it especially effective in helping to throw off that nervous, devitalized feeling of which so many patients complain—unless, of course, there is some serious, chronic ailment which must be corrected.

Cocomalt is an honest food, ethically advertised. It is accepted by the Committee on Foods of The American Medical Association. Laboratory analyses show that Cocomalt increases the protein content of milk 45%—the carbohydrate content 184%—the mineral content (calcium and phosphorus) 45%. It contains not less than 30 Steenbock (300 ADMA units of Vitamin D per ounce—the amount used to make one glass or cup.

Cocomalt mixed with milk is especially useful in pregnancy and lactation, in illness and convalescence, and for underweight, malnourished children.

## ✓ THE PROBLEM OF THROMBOSIS\*

RUSSELL C. PIGFORD, M.D., F.A.C.P.  
TULSA

It is my pleasure this afternoon to review with you an age old subject. In the selection of this subject I offer no apologies, for while the phenomenon of thrombosis dates back to the days of Malphigi, (1666) and while it has been a subject of almost continuous observation and speculation, there still remain many features of the condition unsolved. Occupying a prominent place in a wide variety of disease conditions, it continues to offer a challenge to physicians in practically every field of medicine.

It is not the purpose of this paper to offer a solution of the problem of thrombosis. On the other hand, I propose to reopen the subject, to review some of the recent observations regarding the incidence and pathogenesis, to call attention to some of the common clinical syndromes, and, in passing, to mention a few of the recently suggested therapeutic measures.

#### INCIDENCE

In 1911, thrombi were found in 0.5% of 3,000 autopsies at Johns Hopkins Hospital. In a review of all the necropsy protocols at Peter Bent Brigham Hospital for the interval 1913-1929, Harvey and Levine found intramural thrombi of the heart in 5.3% of the cases. Other figures given would indicate an incidence of thrombosis in all cases varying between one per cent and seven per cent.

Hegler was one of the first to call attention to the increasing incidence of thrombosis. His report, taken from the records of St. George Hospital, Hamburg, showed that in 1913 there were 19 cases of thrombosis in 14,600 admissions; in 1929 there were 153 cases in 17,440 admissions. Of 1,370 autopsies performed in 1913, the percentage had risen to seven. Rosenthal calls attention to the reports from 13 European clinics, all of which show an increased incidence of thrombosis. His observations showed that, in general, while the number of cases was increasing during the war, the rapid rise was in the years following the war, (1921-1928). It is difficult to attribute such figures to the consequences of war, unless

\*Chairman's Address, Annual Meeting of the Oklahoma State Medical Association, Oklahoma City, Oklahoma, May 15-17, 1933.



it be upon the basis of malnutrition incident to a return to civil life. In addition to the European clinics, Rosenthal's survey included reports from eleven widely scattered clinics in North America. Conclusions drawn from his figures would indicate that in the United States and Canada there has been no increased frequency of thrombosis. The rather marked contrast between Europe and America as indicated by these studies invites further investigation.

*Age Incidence:* Thrombosis is encountered at all ages, but by far the greatest number of cases is found in the upper brackets of life. Thrombosis when seen in the younger individuals is usually associated with acute infections; and as a rule, is of minor consideration because of the age of the individual and the transitory nature of the associated disease processes. However, serious consequences may occasionally be encountered. A case of thrombosis of the abdominal aorta in a seventeen year old girl was reported by Banowitch and Ira. In the middle aged individuals, chronic cardiac valvular disease accounts for a large group. In this age group the frequency of thrombosis is enhanced by the postpartal and postoperative cases. After the age of forty, the incidence increases rapidly with each decade. In this group, the degenerative diseases, focal infections, and surgical procedures account for the greatest number.

#### PATHOGENESIS

It is not possible in the brief time at our disposal to discuss the multiplicity of factors which have been suggested as having an influence upon the mechanism of thrombosis. During the many years of study by leading medical men, many suggested avenues have been investigated, the mere mention of which would require considerable time. Suffice it to say, that no one proposed condition, and in most instances, no series of facts, has proved sufficient to explain all cases. I shall be content to mention some of the most important apparent relationships.

Thrombosis has been defined as "intravascular clotting." This definition is hardly justified because, as we understand clotting, many thrombotic processes have very little in common with clotting. However, since we have no better term, and until the process of thrombosis is better understood, we may be content with such a definition.

*Trauma:* Since trauma has been considered a requisite to the clotting of blood, it has also been considered a necessary precursor of thrombosis. In a large number of cases of thrombosis, trauma with incidental injury to the endothelium of the vessels probably plays an important part. However, trauma is not present in all cases. Pickering was able to produce thrombi in vessels in which there had been no trauma, and in which there was no demonstrable endothelial damage.

*Stasis:* Stasis of the blood stream has been emphasized as a factor in the production of thrombosis. Pickering's experiment, mentioned above, was one involving stasis. He was able to produce thrombi by simply tying off a portion of a vein. The role of stasis is suggested in those patients who develop thrombosis during prescribed bed rest. When one recalls the marked shift in the vascular bed, and the attendant retardation of the blood flow incidental to enforced bed rest, in cardiac, surgical and obstetrical cases, the possibility of a relationship between stasis and thrombosis is to be considered. A patient of mine developed thrombosis of the abdominal aorta after ten days of absolute rest in bed, and when the heart rate had been reduced from 160 to 70.

*Cardiovascular Disease:* Thrombosis is more frequently associated with heart disease than any other one group. As an accompaniment of acute and subacute endocarditis, and as a consequence of chronic cardiac valvular disease, coronary arterial disease, and as intramural thrombi associated with chronic myocardial insufficiency, it assumes a position of major importance. The stasis produced in the auricular appendages as a result of a systole in these chambers, probably accounts for the high incidence of thrombi in auricular fibrillation. The most common site for thrombi in the series of Harvey and Levine, were the auricles and the tip of the left ventricle, the points of least circulatory activity in the heart chambers.

*Sedimentation of Blood Cells:* In recent years considerable attention has been given to the rate of settling of red cells as seen in various disease conditions. This phenomenon as applied to the problem of thrombosis has been recorded. Van Allen's observations suggest a relationship between the speed of sedimentation of red corpuscles and clotting. (Pickering page 173). He found that sedimentation of cells preceded clotting, and continued un-

til clotting occurred. Since the sedimentation rate is accelerated in a number of infections, and since the tendency to thrombosis is common in infections, it would appear that this phenomenon is associated with thrombosis. However, as Hegler has pointed out, in the polycythemia the sedimentation rate is slow and the incidence of thrombosis is high.

*Diet:* The enthusiasm for diets in the management of certain diseases is waning. We have found that protein has little or no effect upon blood pressure. As a result of the disappointments following the dietary management of hypertensive cases an reactionary wave has been set in motion, and now proteins are permitted. Who knows but that while we have in many instances not obtained the desired results with our "no meat" diets, we might have unwittingly spared the patients the embarrassments of thrombotic complications. If there has been no increase in thrombosis in this country, a possible explanation may be suggested through the wide spread propaganda against "meat."

Physiologists have demonstrated increased fibrinogen in the blood following the administration of proteins and a reduction in the blood fibrinogen following a meal of carbohydrates. A diet rich in protein increases the clotting power of the blood, while a high carbohydrate diet decreases this power.

*Drugs:* Some of the European authors believe that present day methods of treatment tend to increase the incidence of thrombosis. They call attention to the increased use of intravenous medications and anti-toxic sera. It is interesting to note that the fibrinogen content of the blood is increased following intravenous administration of glucose. Autopsies of patients dying following the intravenous use of drugs frequently show wide spread thrombotic processes. Hewlett calls attention to the production of minute thrombi in experimental animals following the injection of certain tissue extracts and sera. The change in the mode of administration of digitalis from small to large doses is mentioned by the Continental authors. It has been suggested that the increased use of anaesthetics, possibly through a change in colloidal activity of the cells, may influence postoperative thrombotic phenomena.

*Infections:* Infection seems to play an

important, although as yet unsolved role in thrombosis. Rosenow was able to isolate streptococci from emboli in six cases of postoperative pulmonary embolism. From cultures of these organisms he was able to produce thromboses in rabbits and dogs. Hunt calls attention to the unrecognized microscopic infections following operative procedures. He believes there are many instances of minute infections in the operative field found in cases of healing by first intention. Hamilton reported a case of aortic thrombosis in which the only demonstrable causative factor was a marked oral sepsis. Thrombotic processes are not uncommon in chronic sepsis.

#### IMPORTANT CLINICAL SYNDROMES

The protein manifestations of thrombotic processes have been alluded to. However, special consideration should be given a few of the clinical syndromes associated with thrombosis, since in these conditions it assumes a position of major importance.

*Postoperative Thrombosis:* During the past thirty or forty years the progress of surgery has been one of the outstanding accomplishments in medicine. Surgical diagnosis, preoperative care, operative technique, and management of the convalescence of that group of patients, has been developed to a point of maximal efficiency, minimal danger, and with the slightest discomfort to the patient. The advancements in the field of anaesthesia have removed many barriers, thereby constantly opening new fields in which to apply surgical principles. In spite of these advancements, there is one enigma that is a constant damper to the enthusiasm of the surgeon. Today he can foretell with no greater degree of accuracy the occurrence of thrombosis than he could twenty years ago. Fortunately, this complication is not common, but when it occurs the embarrassed surgeon is faced with a grave situation. In the Worcester City Hospital one fatality occurred in every 875 operations. The dramatic occurrence, on the eighth to eleventh postoperative day of an otherwise normal convalescence, of a sudden chest pain, dyspnea, and varying degrees of shock, indicate to the surgeon that a serious complication has arisen.

Trauma to the vessels and injury to the muscles in the operative field, deep retractor blades pressing upon the iliac vessels, and undue manipulation of the veins



have been mentioned as predisposing factors to thromboses. Shifting of the vascular bed with stasis in the vessels of the lower extremities has been previously mentioned. A rise in the platelet count about the eighth to the eleventh post-operative day is believed to have some relationship to thrombosis.

Following the suggestions of various authors, one is justified in attempting to reduce the incidence of postoperative thrombosis by avoiding the above factors. In addition, it would be well to insist upon a high carbohydrate diet, both before and after operation. Walters, in order to avoid stasis, to increase metabolic processes, and accelerate blood velocity, used thyroid extract postoperatively. His figures show a reduction in postoperative thrombosis from 0.3 to 0.1%. Others have reduced the incidence by the use of systematic exercises, and the avoidance of tight compression bandages. Heparin, a substance developed in Howell's laboratory has been suggested as a prophylactic measure, but at this time it is not practical.

After the development of thrombosis certain measures should be insisted upon; absolute rest, and immobilization of the part is most important. This should be continued for a period of from four to six weeks. Hunt, following the suggestion of Stanley-Brown, has found the use of sodium thiosulphate beneficial in a few cases. The onset of embolic phenomena calls for added sedative and possibly oxygen. Chest complications should be met as they arise. The Trendelenberg operation in the hands of a skilled surgeon may mean the saving of a life.

*Postpartal Thrombosis:* Many of the factors present in postoperative thromboses are common to the problem of postpartal thrombosis. The most striking example of this hazard is thrombophlebitis or "milk leg."

Pickering has demonstrated two factors that seem to play a part in the production of thromboses in pregnancy, namely tissue juices and stasis. He was able to produce thromboses in pregnant cats by the injection of tissue juices into the blood stream. Injection of a like or even greater amount into the vessels of non-pregnant cats was attended by negative results. He observed further that the thromboses occurred only in those vessels

below the diaphragm, and in the left ventricle of the heart.

It has been found that the sedimentation rate is rapid in obstetrical cases. This increased rate precedes and follows parturition.

*Acute Infections.* European authors have called attention to the parallel increase in thrombosis and infections. Rosenthal has found no increase in either thrombosis or acute infections in the United States. Loeb has demonstrated that living organisms or their metabolic processes have a direct and variable influence upon the coaguability of blood, such effect being to increase coaguability of blood. Rosenthal's study of cases in the Cook County hospital, reveal that generalized rather than localized infections were more commonly associated with thrombosis. From this, and in support of Loeb's observation, he would reason that there are present changes in the blood stream as a result of infection which predispose to thrombus formation. In the majority of acute infections there is an increase of fibrinogen in the plasma, and a leukocytosis. A notable exception to this rule is typhoid fever, in which there is a reduction in the fibrinogen and a leukopenia.

Thromboses are common complications in pneumonias, influenza, and diphtheria.

*Coronary Thrombosis:* For many years plugging of the coronary arteries was encountered in the postmortem room as an accidental finding which explained the cause of death in obscure cases. It was not until 1912, when Herrick described the clinical syndrome that a serious attempt at antemortem diagnosis was made. During the past fifteen years the literature has been abundant on the various clinical aspects of the condition. The results have been gratifying, in that a large percentage of the physicians today are familiar with, and are making accurate diagnoses. It is interesting however, to note that during this period little attention has been given to the etiological factors. Most authors are content to dismiss the subject of pathological anatomy and physiology with a few comments on arteriosclerosis and high blood pressure. A more thorough understanding of the underlying factors would be welcomed.

The heart is abundantly supplied with blood. It receives its supply chiefly through the system of the coronaries. Ac-

cording to Gross, it is the richest organ in the body as regards capillary and pre-capillary branches of these arteries. Furthermore, a prolific system of anastomoses is provided in the vessels of the parietal pericardium, the bronchial arteries, the internal mammary, and the vessels of the diaphragm. To take care of the circulation in advancing years when arteriosclerosis becomes an important consideration, nature has provided additional vessels in the visceral pericardium. These vessels, known as the arteriae telae adiposae cordis, increase in number with age, and anastomose freely with branches of the coronary arteries. Because of these anatomical peculiarities, Herrick and Gross are of the opinion that the older the individual the less likely considerable damage is done by an obliterating thrombus.

Nevertheless, coronary thrombosis is a common occurrence. One wonders why such an important organ as the heart is so frequently the singular site of a thrombotic process when evidence of degenerative vascular changes may be far more pronounced in other parts of the body. Again, while quite frequently intimal changes in the coronary vessels are the beginning of thrombi, occasional cases are seen in which the lining wall has remained intact.

Infection apparently has little to do with the production of coronary thrombosis. On the contrary, patients suffering from coronary disease as a rule have had few of the serious illnesses, and at the time of the onset are in exceptionally good health, aside from arteriosclerosis.

Stasis plays probably a most important part in the production of coronary thrombosis. The frequent occurrence of an attack while at rest, or during sleep, or following strenuous exertion, and when the blood pressure is relatively low, and the pulse rate slow, are characteristic features of the syndrome. Some of these patients are heavy protein consumers. Factors associated with arteriosclerosis must be considered. The relationship between cholesterol and calcium metabolism to arteriosclerosis, are recognized. An increase in the blood cholesterol and blood calcium are indicative of the presence of progressive degenerative processes in the body. Diabetes is a common associating condition, while syphilis is an unusual predecessor.

The classical subjective finding in a case

of coronary occlusion is pain. The patient without warning is suddenly taken with an agonizing, constricting, viselike or pressure pain in the precordial region. He is aware that something terrible has happened, and will assure the physician he is going to die. Profound restlessness, varying degrees of shock, ashen cyanosis and thready pulse indicate the gravity of the condition.

Treatment is directed first toward the alleviation of pain, and in this one-half grain of morphine should be administered, to be repeated as often as necessary. Heart stimulants may be used as indicated. Oxygen has been used with success by some workers. After two or three days glucose intravenously may be used effectively. Absolute rest in bed should be insisted upon for a period of six to eight weeks, to allow sufficient time for organization and fibrosis of the affected part. After that the case should be handled as a chronic cardiac cripple, the patient to live entirely within the bounds of his cardiac reserve.

#### SUMMARY

1. Thrombosis is apparently increasing in Europe; in America there is apparently little or no increase.
2. Thrombosis is most common in the upper age groups, although it may be encountered at any age.
3. Many factors have been suggested as related to thrombosis, none of which is present in all cases.
4. Cardiovascular disease is the most frequently associated condition.
5. The role of trauma, stasis, sedimentation of red blood cells, diet, drugs and infections, is discussed.
6. Important clinical syndromes such as postoperative thrombosis, postpartal thrombosis, acute infections and coronary thrombosis are discussed.
7. Recently applied therapeutic measures are suggested.

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#### DIPHThERIA IMMUNIZATION WITH A SINGLE INJECTION OF PRECIPITATED TOXOID

A. H. Graham, L. R. Murphree and D. G. Gill, Montgomery, Ala., (Journal A. M. A., April 9, 1933), point out that a single injection of from 5 to 10 units of precipitated toxoid has rendered 171, or 92.4 per cent, of 185 strongly Schick positive children Schick negative. Of 613 children, 592, or 96.6 per cent, were Schick negative when tested from two to four months after a single injection. The original immunity status was unknown, but 72 per cent were preschool children.

#### UNUSUAL ENCEPHALOPATHY, PROBABLY INFECTIOUS IN ORIGIN: CLINICAL REPORT ON TWENTY CASES

H. D. McIntyre, Cincinnati (Journal A. M. A., April 8, 1933), observed twenty cases of encephalitis differing in their clinical manifestations from the epidemic which first appeared in 1914. Hemorrhage into the spinal fluid was a prominent feature, occurring in thirteen patients of the series. The spinal fluid pressure was definitely increased in only three cases. A lymphocytosis was observed in seven and an increase in globulin was noted in five cases in which no bleeding occurred into the spinal fluid. This suggests a serous infiltration in those cases with perhaps increased permeability of the pial vessels, which in more severe forms allowed blood cells both red and white, as well as serum, to escape from the blood vessels. Somnolence, at times deepening into coma, was a prominent feature, occurring in twelve of the series. Coma was observed in nine cases. Double vision occurred in six of the twenty cases, and pyramidal signs constituted a prominent feature, occurring in fourteen of the twenty cases. This is in marked contrast to the cases observed in the epidemic of so-called lethargic encephalitis, in which extrapyramidal signs were more commonly observed than pyramidal signs. Another marked difference in the cases noted in this series from those of epidemic encephalitis is that in the present series no extrapyramidal residuals have so far been noted. Convulsions beginning with jacksonian symptoms passing into generalized convulsions were observed in seven cases, bespeaking motor cortex irritation; death occurred in nine cases; congestion of the disks occurred in seven, and a choked disk was observed in two.

#### OBSTETRICAL PROBLEMS\*

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A problem is something to be solved, after it is solved it is an example and sometimes I would that we had more examples to work and less problems to solve. However, if all of them were solved, our work would become routine. The pleasure of pursuit and much of the satisfaction of accomplishment would be eliminated from practice. It is an idle thought to suggest such perfection and oft times a solution of one problem involves another.

I would not attempt a complete discussion of any of these problems nor presume even to mention all of them. The frequent discussions pertaining to obstetrics in lay publications gives evidence of questions still unanswered, and of their universal interest and importance. The responsibility for the solution of the scientific and practical problems rests upon us as obstetricians, however, and we must assume it with a serious sense of our duty to the public.

Among the scientific problems of obstetrics, since the earliest medical history, we find the question of the specific cause of the toxemias of pregnancy. What causes morning sickness and grave vomiting? We find those who think that the early nausea is primarily psychic, and that hyperemesis gravidarum with its attendant acidosis, dehydration, nephritis, hepatic degeneration, etc., is secondary. Is it psychic alone? If the anterior pituitary body can throw into circulation of a pregnant woman a hormone which is excreted by her kidneys to the extent that 10 c.c. of her urine has a hormone potency capable of exciting the maturing and rupturing of the graffian follicles of a rabbit in from twenty-four to forty-eight hours after its being injected into the rabbit; why is it not reasonable to think that an embryo of four to six weeks gestation might not be capable of producing a toxin in quantities sufficient to produce nausea and vomiting in its host? Without question the psychic state of the patient has its influence but when we come to know more about the endocrines and their functional interdependence, both between themselves and psychic states, we will no doubt, be sur-

\*Chairman's Address, Obstetric and Pediatrics Section, Forty-first Annual Session, Oklahoma State Medical Association, Oklahoma City, May 16, 1933.

prised not alone at the specific cause but at the simplicity of treatment for the vomiting of pregnancy. If there is any potency in the administration of lutein extract for vomiting of pregnancy and the number of cases that improve when it is given would warrant its receiving some attention in the light of what we know now regarding the functional relation of the anterior pituitary body to that of the ovary, and that in certain animals copulation and even mechanical stimulation of the cervix will cause the anterior pituitary body to throw a shower of its hormone into the blood stream and thus stimulate lutein producing activity of the ovary; why does this not render a rational explanation of the efficacy of the once popular cervical painting and dilatation as a treatment for the vomiting of pregnancy? I would not advance this as a theoretical explanation of the occasional success of this treatment but the question, might it not be so, suggests itself.

Time does not permit any further discussion of the mysteries of the nausea and vomiting of pregnancy but permit me to leave with you these questions. Why does the grave vomiting seldom, if ever, occur in an illegitimate pregnancy? I ask, if ever, because I have never seen one in an illegitimate and yet it has been my experience that eclampsia is more frequent among illegitimates than it is among legitimate pregnancies. Why does the presence of the husband often incite nausea and vomiting in early pregnancy? Why does the nausea usually cease at the end of the first trimester? In passing let me say that there are many theories in answer to these questions but they are still unsolved problems.

Eclampsia, the late toxemia of pregnancy, which I discussed last year before this association, is still a problem although I believe the trail of its etiology is warm to the olfactories of scientific research.

Then there is the question—Doctor, can you tell me whether I am going to have a boy or a girl? In the light of our present knowledge, of course the answer is “no.” Only the tyro or quack would say “yes” or even venture an opinion. Yet there are two problems in that question, both of which intrigue the research faculties of the obstetrician and scientist. First, what causes sex differentiation and can it be controlled? Second, can we ever answer the expectant mother’s question

or rather evolve any method of determining sex in utero? Statistics in all civilized countries show the ratio of 106 boys to 100 girls has prevailed approximately stable throughout the world ever since records have been kept. Contrary to popular opinion, war, famine nor climate cause any appreciable variation. Do we want to know the cause and control of sex differentiation? I think not, and approve the sentiments of Edgar A. Guest who says:

“Oh what a curious world ’twould be  
without divine control,  
And we could order children as we order  
meat and coal.  
I think it better as it is, were ours the  
choice to make,  
There’s none of us could be quite sure  
which one we ought to take.”

So far as determining the sex of the foetus in utero is concerned, it may sometime be accomplished scientifically but whether it is or not is of little importance except in giving the expectant father some advanced information by which he could profit when tempted to bet on a boy.

If Unterberger’s theory and investigations prove that the strongly alkaline male sperm and a weakly acid vagina begets males, I am afraid soda will become popular both in douche and diet because of the laymen’s tendency to think that if some is good, more is better.

Coming back to more practical problems, however, we are confronted with puerperal sepsis. Contrary to the lay press, it is becoming less prevalent and slightly less disastrous when it occurs. To a great extent it can be prevented because contamination, hemorrhage, traumatism, and shock, largely under control of the obstetrician, can be prevented. So far no immunizing reagent has been found. Neither has any specific antiseptic that renders the blood stream free been developed.

The thrombosis which produces and feeds the infection into the circulation is the great problem. What causes thrombosis and can it be controlled? I would here pay tribute to the memory of John O. Polak by stating that his work upon the pathology of puerperal septicemia, to my knowledge, is unsurpassed and I believe that his treatments consisting of frequent small blood transfusions alternating with glucose intravenously will accomplish a greater percentage of cures than any



remedies so far devised. From his writings, lectures and round table talks, I believe that among the chief desires of his life was the solution of the problem of puerperal sepsis. I would that he had lived longer for he was not only a great student but had the faculty of imparting his knowledge to others in a practical and understandable way.

What causes the inception of labor pains? Does the stimulus come from the endocrines of the mother or does it come from the foetus or placenta? The solution of this problem might relieve obstetricians of the stigma of being dubbed "night watchman."

Abortion is a problem for the obstetricians. How shall we determine its prevalence? There are no reliable statistics regarding its frequency nor its effects. Which occurs more frequently, the spontaneous or criminally induced? How can we prevent either class? I believe if we could eliminate the criminally induced abortion, we could say that the cause and treatment of the spontaneous would give us little trouble.

Therapeutic abortions bring into play upon the part of the obstetrician careful conscientious judgment and courage. The first to weigh the indications and the second to assume the responsibility. This problem will always be with us and the most difficult phase of the abortion problem in general is the education of the public to the sense of the seriousness of it. Many uninformed individuals confuse induced abortions with contraception as a means of birth control. Birth control is not essentially a problem for obstetricians to solve. There are scientific phases of this such as the dangers and efficacy of contraceptives which concern us but it is primarily and logically a sociological problem. It has been my observation that among those where birth control is most indicated from an economic and sociological standpoint, advice and instruction does practically no good.

There are many other problems that concern us as individuals in the practice of obstetrics. Problems of diagnosis, methods of procedure in the various dystozias, and many times with the life of the mother or baby, or both, depending upon our solution.

Every delivery is a problem. Oftimes in a flash a critical situation will arise; such as a prolapsed cord, a placenta pre-

via, concealed hemorrhage or any one of the tragedies of obstetrics may present itself and require some rapid mental gymnastics as well as skillful manipulation. The failure to do the right thing at the right time accounts for many maternal deaths and a greater number of still births.

A reduction in the still birth rate is an important problem. A still birth rate of ten per cent in the pregnancies that reach the viable stage of gestation is shocking. Approximately one-half occur during labor or soon after, so that some error in the management of or preparation for labor is responsible. It is a problem of large proportions. No one doing obstetrics can hope to have a perfect record, free from still births, but if a thorough, honest investigation were made in every case, and when the cause was found to be due to an error of judgment or procedure and that error were honestly and courageously acknowledged, I believe the number of still births, neo-natal deaths and birth injuries could be markedly reduced. In other words, better training for those doing obstetrics would help.

I have presented these obstetrical problems with the idea of bringing out the facts that the study and practice of obstetrics furnish material of interest to the profound thinker, plenty of work for the most astute diagnostician and cases that would try the skill of the best operators.

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#### CONTRARY THERAPEUTIC AND SEX RELATIONSHIP OF SYPHILIS AND TUBERCULOSIS

William F. Peterson and Rudolph Hecht, Chicago (Journal A. M. A., July 9, 1932), point out that the established therapeutics of tuberculosis and of syphilis is antithetical. The alternatives, in which category nonspecific therapy may be included, used in dosages followed by catabolic effects, are effective in syphilis but harmful in tuberculosis. The biologic changes incidental to the female sex cycle have a corresponding contrary effect on these infections. Tuberculosis in the female is more malignant, syphilis generally more benignant, the reasons being found in the enhanced inflammatory reaction of the premenstruum. The sex liability of the tuberculous patient finds clear expression in the mortality curve, while the relative protection of the syphilitic female is demonstrated in the greatly lessened incidence of neurosyphilis. Fundamentally, of course, the difference in the ultimate clinical effect of the identical biologic cycle lies in the ability or disability of the tissues and fluids of the body to dispose of the virus which is disseminated when premenstrual activation of localized lesions takes place.

## SAFETY FIRST CATARACT PROCEDURE\*

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The operative treatment of cataract should give the most brilliant result of any procedure in ophthalmology.

Every cataract rendering an eye un-serviceable should be removed by discission or extraction. If the vision in the fellow eye is normal, the patient will not get binocular single vision, yet, some can wear their correction without producing diplopia. However, with or without glasses, the patient gets valuable indirect vision, thereby preventing retinal deterioration, and often prevents strabismus of the affected eye.

Some ophthalmologists do the various methods, such as suction, intra-capsular and extraction by pressing the fingers on lids. All have a set of instruments which have stood the test of time, for use when their pet methods fail, and they fail in a large percentage of cases. This proves that the old standard technique is the best for universal use.

A cataract extraction should be conducted with the same degree of precaution and skill as the person who handles TNT. Unfortunately the patient carries all the burden.

A cataract technique cannot be developed by watching others perform the operation any more than you can learn to swim by standing on the bank. Many animal eyes are required to develop and maintain a sure steady hand and prepare one to meet all the complications as they arise.

A successful cataract extraction is best obtained by team work, and the patient is part of the team. The fewer the words while operating, the better.

We select a bed with a low foot railing, then place the patient's head at the foot of the bed and let patient remain where he was operated for forty-eight hours.

The selection of the patient is governed by a general and a special examination. The general examination should cover his physical and mental condition as follows: General or focal infection should be elimi-

nated. The kidneys should function properly. Determine whether patient can void while lying in bed, complete evacuation of the bowels, and a blood pressure over 190 should be lowered twenty or thirty points, either by treatment or venesection. Chronic coughs should be controlled. Their sensitiveness to cocaine should be tested. All local eye infections should be eliminated. The lids and face should be free from pimples or abscesses. The lachrymal sac should be cleansed and sealed by cauterization, if found infected. The conjunctiva always contains bacteria, and routinely we use about 1-8% zinc solution one week before we do any intraocular operation, and at the time of the operation the lids and face should be cleansed with benzine, soap, water and alcohol, and if there is the least doubt, a 1% silver nitrate is instilled one hour before operation and a thorough brisk irrigation of conjunctival sac with 1-10,000 bichloride of mercury solution just preceding the operation.

An amytal compound given the night before and one the morning of the operation, will quiet the nervous tension of most patients. The orbicularis may be controlled by akinesis, that is, injecting 1 c.c. of a 1% procaine solution in each lid, also by injecting the main branches of the seventh nerve.

A few drops of 4% cocaine with adrenalin, followed by four drops of a 10% solution seems to be the anaesthetic most used.

A simple extraction is preferable in suitable cases, as hard or mature cataracts and a mobile pupil, because the dazzling of light is not as troublesome. They can see better without glasses and it matches the other eye in appearance. Glaucoma, iritis and optic atrophy do not follow a simple extraction as often as in a combined.

In senile cases, with increased blood pressure, we can avoid the hemorrhage during the extraction if a preliminary iridectomy has been performed.

A general rule seems to be practiced that people with one eye should have a combined operation, with a month's time intervening between the iridectomy and the extraction. If it is safer for a one eyed person, why not give every eye the same advantage, and we always do, especially if we are unable to dilate the pupil, or if they have a chronic cough,

\*Chairman's Address, Eye, Ear, Nose and Throat Section, read at Forty-first Annual Session, Oklahoma State Medical Association, Oklahoma City, May 15, 16, 17, 1933.



asthma, or an immature or complicated cataract.

We always use lid hooks instead of the speculum, and by raising the lid the conjunctiva is raised also. This keeps the contents of the globe in place.

In both simple and combined operations we always make a large conjunctival flap before making the corneal incision. This conjunctival flap is turned down onto the cornea, to be replaced by the same stroke that delivers the lens. This immediately seals the wound and further toilet of the eye may be safely done, and irrigation of the anterior chamber, if necessary, with greater safety.

A 3 m.m. less than a 9 to 3 incision is made 2 m.m. in front of the sclero-corneal junction.

When the operation is completed, the lids are gently closed with forceps, and kept in place by the thumb holding the skin taut at the outer angle of the eye, to prevent the upper lid from opening and pushing the conjunctival flap out of place and allowing the vitreous to escape and carrying the iris into the angle of the wound. While the skin is taut, a very thin piece of wet cotton placed on the lid will seal them tightly. More dry cotton is used and both eyes bandaged and covered by a wire shield.

After the operation we place a pillow on each side of head and loosely fasten a sheet across the chest to each side of the bed to awaken the patient if he tries to turn while asleep.

On the second or third day the eye is opened and usually the anterior chamber is reformed. A 1% atropin is then used. The cover on the unoperated eye is discontinued and the bandage on the operated eye is changed every other day for two weeks and then discontinued.

A common cause of delayed healing and failure is by leaving transparent cortical material and iris between the lips of the wound and under the conjunctival flap. This can be prevented by the proper use of the spatula.

A dissection is usually required about one month after the extraction. A small hole in the remaining capsule just below the center of the cornea is desirable.

Younger patients may use bifocals, while the elderly people need one pair of

glasses for distance and a stronger pair for close work.

A few cases have binocular single vision following a double extraction.

#### DUPUYTREN'S CONTRACTURE

Sumner L. Koch, Chicago (Journal A. M. A., March 25, 1933), believes that the most significant fact with reference to the development of Dupuytren's contraction is the frequency with which one is able to elicit a history of similar involvement in other members of the family, and in the males particularly. The hereditary factor, frequently mentioned by earlier writers, assumes increasing importance if one questions patients carefully concerning their forebears. Among his patients with Dupuytren's contraction there have been eleven physicians, the daughter of a physician and the nephew of a physician. Approximately one-half of the patients who have come under his observation have ascribed the onset of the condition to a single definite injury of the hand or to continued irritation associated with constant use of the hand in some specific occupation or sport. Of these thirteen patients, ten have given a history of a similar or, perhaps, of a more extensive contracture in other members of the family. In the treatment of Dupuytren's contraction, it is difficult to improve on Ferguson's treatment which is as follows: The fascia should be dissected out at once. An incision should be made through the skin over the whole of the contraction, and if the integument is tolerably soft and thick it should be turned off on each side so as to expose the fibrous tissue, which should then be carefully taken away. The utmost care should be taken to avoid the nerves and blood vessels at each side of the finger, and if the operation can be satisfactorily effected without opening a sheath or touching a tendon so much the better. The author's results have constantly improved, as he has used greater care to remove all the involved fascia, to avoid trauma of skin flaps and of digital nerves and vessels, and to leave nothing undone in the preoperative preparation and operating room technic that would help to protect the patient from wound infection, and so help to insure primary healing of the operative wound.

#### USE OF AUTOLYZED LIVER IN TREATMENT OF PERNICIOUS ANEMIA

Further work has substantiated the preliminary observations, and, because of their important relation to practical liver therapy and theories regarding the possible nature of the beneficial agent, William F. Herron and William S. McElroy, Pittsburgh (Journal A. M. A., April 8, 1933), report the results of treatment of thirteen cases of pernicious anemia with autolyzed liver. They give a description of a method by which the material is concentrated under reduced pressure. The temperature is prevented from rising above 55 C., as the potent material appears to be partially destroyed by prolonged heating above this point. Although the dried material can be administered more conveniently concentration is not essential, as the crude unconcentrated filtrate was found to be palatable and effective. The oral dosage requirement of autolyzed liver approaches the intramuscular requirement of other liver preparations.

## PROGRESS IN DERMATOLOGY\*

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TULSA

## FOREWORD

The pioneer dermatologist in Oklahoma was Dr. Everett E. Lain of Oklahoma City, and for many years he was the only representative of the specialty. During the past decade a number of others have established themselves in the larger cities of our state and there is now an active organization of dermatologists, The Oklahoma State Dermatological Association, which holds meetings twice each year. In recent years, too, a greater interest in, and an understanding of dermatology has been manifested by physicians engaged in general practice, so that the practice of the past, of using sulphur and zinc oxide ointments alternately, and trusting in Providence, is rapidly disappearing. Considering, however, that the majority of my audience is composed of physicians not primarily interested in the practice of cutaneous medicine, it has occurred to me that it might be better not to discuss some particular problem, but to attempt a bird's-eye view of the progress of this specialty. In the limited time allotted a mere outline can be given.

Until the time of Hippocrates we know little of dermatology. Certain of the Egyptian papyri were devoted to medicine and a number of their prescriptions have been recorded: to prevent the hair turning gray, to produce its growth on bald heads, and to dye the hair. A remedy for baldness consisted of equal parts of fat of the hippopotamus, lion, crocodile, goose, snake and ibix. What better remedy do we have today for this mysterious condition?

The Hebrews had no special books devoted to medicine, and only casual references are made in the Bible and the Talmud to cutaneous conditions. The hirsutism of Esau and the curse of Jobe come to mind, as do the numerous references to leprosy. In discussing whether biblical leprosy was the same as the leprosy of today, McEwen states what is most commonly held true: "The word 'leprosy' did not refer ever and always to true leprosy, but was rather a generic term conveying

various sorts of inflammatory skin diseases, which rendered the one afflicted unfit to associate with others."

The Hindoos respected medicine highly and it appears that, although they had no specialists, their practice was on an equal plane with that of the Egyptians.

## GREEK, ROMAN AND ARABIAN DERMATOLOGY

Under the leadership of Hippocrates (born about 460 B. C.) a more scientific study of medicine began, and the father of medicine boldly separated it from the sophistries of the philosophers and the superstitions of religion. Sir Erasmus Wilson, in 1868, wrote an essay on the "Dermal Pathology of Hippocrates," and stated that while many Greek terms cannot be identified at present, Hippocrates used many terms which are still in use, for example: anthrax, ecthyma, erysipelas, erythema, herpes, kerion, pityriasis, psora, sycosis. Wilson also writes: "Hippocrates looked upon many diseases of the skin as curative attempts of nature which should not be interfered with, a superstition that was handed down for centuries, even to the early English period of dermatology."

The Romans copied from the Greeks; the works of Celsus (published 18 B. C.), and of Paulus Aeginata (7th century A. D.) being compilations of medical knowledge and historically important.

The Arabian physicians were more accurate and distinct in describing cutaneous diseases than the Greeks and Romans. They first described measles and variola, and the itch-mite was discovered by one of them in 1162. The greatest name among them is that of Avicenna (980-1036), who wrote many works on medicine, and attempted to reconcile all known medical knowledge of his time with the systems of Galen and Aristotle.

## MODERN DERMATOLOGY

From the time of Avicenna to the end of the eighteenth century practically no advancement in dermatology was made. Now, however, two remarkable men stepped upon the stage—Baron Jean Alibert (1766-1837) and Robert Willan (1757-1812). Alibert popularized the study of dermatology at the St. Louis Hospital in Paris by a curious combination of intense intellectual energy and a strong sense of the dramatic in his lectures. It is said that on one occasion, to illustrate the desquamation in Pemphigus foliaceus he

\*Chairman's Address, Urology, Syphilology and Dermatology Section, read at Forty-first Annual Session, Oklahoma State Medical Association, Oklahoma City, May 15, 16, 17, 1933.



threw a handful of scales on the heads of those sitting in the front row. Alibert also popularized the drawing of skin lesions.

Robert Willan was the real founder of modern dermatology. Following a year of general practice at Darlington, in northern England he went to London in 1782. The following year the Public Dispensary in Carey Street opened and Willan was appointed its physician. In 1790 he received the Fothergillian gold medal for his work in classifying diseases of the skin. Between 1798 and 1808, portions of his work, "On Cutaneous Diseases," were published, but the work was completed by his student, Bateman, in "Practical Synopsis of Cutaneous Diseases according to the arrangement of Dr. Willan," I. Bloch says of Willan's book that it had the greatest recognition in all European countries—such as no other treatise on the subject before or since has received. Willan used a classification based on the general appearance of the local lesion, viz: papules, squamæ, exanthemata, bullæ, vesicles, pustules, tubercles, macules. It clarified and systematized diseases of the skin and made clear the path for those who followed.

Willan was followed in England by many great dermatologists—Bateman, Hillier, Tilbury Fox, Crocker and Wilson, but because of the lack of centralization of teaching, London never became a world center for the students of dermatology. Paris, and later Vienna—each city holding great clinics under one roof—attracted the students. Alibert was succeeded at St. Louis Hospital by a long succession of eminent dermatologists, among them Biëtt, Rayer, Cazenave, and Bazin.

In 1841 Ferdinand von Hebra (1816-1880) was put in charge of the skin clinic at the University of Vienna. Between this time and 1866 when Austria was crushed by Prussia, men, including some of the greatest investigators and teachers in all branches of medical science, flourished, and developed what is known as the New Vienna School of Medicine. In this learned atmosphere, and aided by the advances in pathology made by Virchow and Rokitsansky, and by access to almost unlimited clinical material, Hebra could not but aid materially in unravelling the tangled skein of cutaneous medicine. His individual contributions were few—he first identified erythema multiforme (a common disease) and three very rare diseases

(rhinoscleroma, impetigo herpetiformis, and lichen scrofulosorum). Hebra classified skin diseases based upon pathology, and opened the field of microscopic diagnosis in dermatology. He was a great teacher as the names of some of his students testify: Neumann, Pick and Kaposi. Possibly his greatest contribution to progress in dermatology was his controversial tendency. Contrary to all that had been taught, Hebra stated that nearly all skin diseases were due to external causes, and that they needed only external treatment. He stirred the dermatological world into controversies which, while at times bitter, were clarifying. This influence is responsible for the change of attitude of French dermatologists, who until this time held that skin diseases were, largely, the cutaneous expression of some constitutional "diathesis."

The last half of the nineteenth century was marked by numerous original descriptions of skin diseases, and valuable work in microscopic pathology, particularly by Paul Unna of Hamburg. An immense amount of work was also done along bacteriological and parasitological lines; the former proving largely disappointing. Of the highest importance was the discovery of vegetable parasites as a cause of skin disease. Earlier work of Schoulein (*Acharion Fungus of Favus*—1839), and David Gruby (on tineal infections 1841-43), and others, was the stimulus for the great work of Raymond Saborand of Paris on mycotic skin diseases beginning in 1892. His investigations have been amply confirmed and enlarged upon by Whitman and numerous other dermatologists including such Americans as Ormsby and Mitchell, J. C. White and Wiedmann.

Roentgen discovered the X-ray in 1895 and only a month or two later its use as a therapeutic agent was suggested by Schiff and Freund, following their observations of the biological effects of Roentgen-ray in long exposures. William Allen Pusey of Chicago was one of the earliest Rotengen-ray therapeutics and published a book on the subject in 1904. The advent of the interrupterless transformer (Snook—1908), and the Coolidge tube (1914) simplified the problem of dosage and George M. McKee and his associates of New York by their investigations have made Roentgen therapy in the treatment of cutaneous disorders reasonably safe and efficient. This has been of the great-

est importance as in about eighty diseases of the skin this therapy can be used with benefit.

Radium was discovered by Madame Curie (1898), and three years later Becquerel received his famous burn from a tube of radium which he carried in his pocket and this suggested its therapeutic use. About 1920, several large institutions in this country purchased large amounts of radium and careful investigation has proven its value in the treatment of many diseases, including some of those affecting the skin.

The ultra-violet ray (Hewitt—1901) and surgical diathermy also have aided in treating certain skin conditions.

The development of modern industry has given rise to a large number of occupational diseases, many of them cutaneous disorders, and the number of these is increasing rapidly, as comparison in size of the various editions of N. Prosser White's book on this subject will testify.

#### AMERICAN DERMATOLOGY

In 1837, Dr. H. D. Bulkley of New York, returned from Paris, where he had studied under Alibert and Bielt, and established the Broome Street infirmary for diseases of the skin, and there delivered the first lecture upon this subject in America. Dermatology is, therefore, less than a century old in the United States, but in that time has made advances as amazing as those in the other fields of medical practice. It will not be possible to enumerate those here, but a few contributions by Americans stand out and may be mentioned:

The descriptions of Blastomycosis by Gilchrist; of Sporotrichosis by Hektoen; of Dermatitis Herpetiformis by Duhring; of progressive pigmentary dermatosis by Schamberg; and of hydrocystoma by Robinson, are classical.

The work of McKee in Roentgen-ray therapy has been discussed above. Pusey introduced carbon dioxide snow as a therapeutic agent, and C. J. White crude coal tar. The use of sodium hyposulphite in arsenical dermatitis was introduced in this country by McBride and Dennie, and saline injections in bromoderma and iododerma by Udo Wile.

Dermatology today is far removed from that of a few decades ago, and its practitioners are not externists, but as Highman states are internists who know the skin—who know when to be internists

and when not to be. Francois Rabelais said that "the practice of medicine is but a farce played by three actors: the physician, the patient, and the disease." This was true once—but "today, the practice of medicine is an empiricism tempered by science, but an empiricism that will become more and more scientific if only the enthusiasms of the moment are corrected by the philosophy and judgment that nothing but a knowledge of the history of medicine can supply."

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#### AN IMPORTANT CONTRIBUTION TO THE SCIENCE OF INFANT FEEDING

Early in the 20th Century, Heubner, Germany's first pediatrician, proved that the young infant requires around one hundred calories per kilogram of body weight every twenty-four hours. Since then, it has been customary to start each bottle-fed baby on a weak cow's milk modification that is strengthened from time to time as tolerated, and as the infant's weight increases. The success of bottle feeding has been attributed in part to such adaptation of the food to suit the infant.

On the other hand, it has been observed that breast-fed babies show excellent progress on a food that does not vary materially in composition. As the infant grows the mother merely allows greater amounts of breast milk. Recognition of this fact led Dr. Louis Sauer of Evanston, Illinois, to develop "a simple, inexpensive stock formula for young infants" consisting of Evaporated Milk, water and lactose, and having a caloric value of twenty-one per ounce.

Doctor Sauer's formula, as described in the Journal of Pediatrics, closely resembles breast milk in caloric value, sterility, and chemical composition, and in the formation of soft curds in the stomach. It needs no strengthening, but merely is given in larger quantities as required.

A group of young infants were fed this formula in maternity wards, day nurseries, and foundling homes, and showed a rate of weight increase quite like that of nursing infants of the same age and weight. Your readers might be interested in a report, which may be had upon request to the Evaporated Milk Association, 203 North Wabash Ave., Chicago.



## THE AMBULATORY TREATMENT OF VARICOSE ULCERS\*

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Varicosities of the lower extremities with secondary eczema and ulcers is a most frequent incident in every out-patient clinic. Until recent years, this disease process has not received the attention from either physicians or the public that it so justly deserves. Varicose ulcers produce untold inconvenience, suffering and humiliation, and result in an enormous economic loss to the individual.

The truth of this statement is verified by a review of the case records of any clinic in America. More especially is this true in Central Europe where the loss of man power during the World war has forced the middle aged women into the fields and factories where they spend long, strenuous hours upon their feet.

Varicose veins, with subsequent eczema and ulcers, are more common to the female, especially during the childbearing period, when preservation of physical strength is so needful. This pathologic process may become an unsightly barnacle upon the limbs, seriously impairing her physical and social activities.

To the artisan of labor it may become a ball and chain which drags him behind his equals in the forward march toward positions of authority and better compensation. Therefore, any new treatment which gives promise of success, comfort, functional activity and economy, and which can be applied quickly by the physician of ordinary skill, commands our immediate consideration. Such are the claims made by the author and other physicians who have, during the past few years, been using the new elastic adhesive bandage for this disease process.

### TREATMENT USED IN VIENNA CLINICS

My first observation of this treatment occurred while visiting one of the large out-patient clinics of Vienna during the summer of 1930. In this clinic, I witnessed the application of this treatment to numberless lines of laboring men and women

who came directly from fields and factories once every fortnight to have their legs redressed with this magic bandage. I was told that their pain and edema would immediately subside, and that the ulcers would heal in an average of from three to six weeks, while they continued their daily vocation.

I was further informed that a permanent collapse and sclerosing of the varicose veins would occur in approximately seventy-five per cent of all types of cases treated. Later, I saw many cases which had been previously treated and which apparently verified such an optimistic expectancy.

After my return, I experienced much delay in securing this particular kind of bandage, due to its foreign manufacture and the lack of an American agent. During the interval, I used a substitute consisting of ordinary adhesive tape with a double side coating of adhesive material. This bandage afforded more elasticity than the ordinary adhesive tape and was beneficial to many cases, though did not in any manner compare with this new elastic adhesive<sup>8</sup>.

### REVIEW OF LITERATURE

My attention has recently been called to a full and commendable discussion of this treatment by Wright<sup>1</sup>, (London); also, I have since read a brief discussion of the treatment, and report of two cases, by Dixon and Smith<sup>2</sup>, (Mayo Clinic), each of whom commented favorably upon the distinct advantages of this bandage.

The treatment of varicose veins by the injection of sclerosing chemical solutions was a distinct improvement over the previous surgical and medicinal methods of handling this well-known disease. We now know that the injection treatment has certain disadvantages and is not applicable to all types of cases.

The percentage of recurrences from the injection method of treatment has now become more than a mere incident. Witness the articles in recent issues of standard medical journals under headings such as "Recurrence of Varicose Veins Following Injection"; "Causes of Failure in the Treatment of Varicose Veins," etc. These authors also call attention to the danger of certain though rare accidents, and emphasize contraindications such as septic phlebitis, cardiac hypertension and arteriosclerosis.

Howard, Jackson and Mahan<sup>4</sup> have re-

\* (From the Department of Dermatology and Radiology, University of Oklahoma School of Medicine, and the Lain-Roland Clinic. Read before the Section on Dermatology and Syphilology, Pan-American Medical Association meeting, Dallas, Texas, March 21-25, 1933).

ported a high percentage of failures due to recanalization of the injected vein, nature's characteristic effort at restoration of her vital circulatory system.

McPheeters and Merket<sup>6</sup>, after an elaborate discussion of the etiological and pathological picture, as well as various methods of treatment, conclude that "destruction of reflux venous flow, except in some of the more superficial and recent cases, is not sufficient to produce healing of the ulcer. One must also in some way remove the inundating, stagnant serum and lymph from the tissues, at the same time enhancing the opportunity of the tissues to receive a more constant supply of arterial blood with its revitalizing properties." They enumerate

compression, together with the use of the American Ace bandage, did suggest the ingenious concept which brought forth this German product.



CASE NO. 2—Two weeks after first bandage was applied.



CASE NO. 2—Illustrating window in bandage.



CASE NO. 2—Two and one-half years after treatment, only moderate pigmentation remains at the site of ulcer.

and briefly discuss various methods which have previously been used for the specific purpose of affording compression and support of the tissues, commenting favorably upon the rubber sponge, though do not mention the elastic adhesive bandage.

The advantages of a rubber sponge to reinforce the compression afforded by the gauze bandage directly over the ulcer, suggested by Nobel, advocated by McClure, and later emphasized by McPheeters and Merket, was another valuable addition to our former treatment of this disease. The rubber sponge, however, does not afford compression to the entire limb, which is of paramount importance for the healing of the ulcer. Doubtless the sponge

#### THE TECHNIQUE OF APPLICATION

The technique of application is simple and easily mastered. The cutaneous surface of the limb to be bandaged, including the ulcer, must be carefully cleansed with soap and water, ether or alcohol. If the ulcer is foul, application of tincture of



merthiolate or tincture of metaphen is advisable. A thin piece of sterile gauze is then spread smoothly over the raw surface of the ulcer before bandaging is begun, though this is not essential in every case.

The patient should be placed in a reclining position. An assistant keeps the foot at right angles to the leg and elevated above the head. If the veins are large and distended, they should be stripped gently upward with a gauze sponge.

The bandage used should be not less than two and a half or three inches wide, three or four yards long. Bandaging is begun just back of the toes and is continued upward in a circolo-spiral manner,

change if contaminated by drainage or accidental filth.

The patient should be advised as to the possibility of over or under-tension and report promptly if it needs to be modified, though this is an infrequent incident in the hands of an experienced physician.

Unless the inflammatory condition is marked and discharge excessive, ten or fifteen days is not too long for the average case to wear the first bandage.

There are certain therapeutic advantages in a prolonged period of the first and second bandages. If the ulcer is properly cleansed before bandaging and sufficient compression is used, the exudate is of



CASE NO. 10—Before bandage.

overlapping one-half its width with each turn over the foot, ankle and leg to the knee. The degree of compression or necessary tension on the bandage is determined by the amount of edema present.

It should fit snugly without creases over the concavities of the ankle, enclose the heel, and terminate just below the knee. In some cases it may be found advisable to bandage over and above the knee. It may be necessary to sever the bandage several times and start anew, in order to cover the concavities around the ankle joint.

After the bandage has been applied, dusting with talcum powder and covering with a plain gauze bandage will protect it from sticking to the hose, and permits a



CASE NO. 10—After bandage is applied.

minor consideration. It is usually taken care of by the expansion and permeability of the bandage. If excessive, it may become necessary to make a puncture in the bandage over the lower angle of the ulcer for its drainage. The old Unna dressing or gelatin boot does not afford such security.

I am convinced that a window over the ulcer, a technique I once followed, is a disadvantage in most cases, rather than necessary, and that the heel of the foot should also be included in the bandage.

The second and subsequent bandages should be applied with the same precautions and technique as the first, though

they can usually be worn for an increasing period of time.

The total length of time the limb should be kept bandaged depends upon the degree of the varicosity and the judgment and experience of the physician.

The ordinary case of varicose ulcer of medium size will heal within a period of fifteen to thirty days. An obliteration of a part or all of the over-distended veins has usually occurred after a period of one to three months.

#### SUMMARY AND CONCLUSIONS

The advantage of the elastic adhesive bandage treatment of varicose ulcers may be summarized as follows:

1. It is curative in a high percentage of all varicose ulcers, including varicose veins and eczema of the lower limbs.

2. It requires no particular skill for its application. Any physician who knows the ordinary technique of bandaging a limb can apply this treatment within a few minutes.

3. It protects the tender epithelium from irritation and trauma of repeated dressings; it compresses the over-riding, exuberant granulation and approximates the borders of the ulcer.

4. It abolishes pain, completely obstructs varicose circulation, diminishes edema, and hastens the healing of the ulcer, and improves the condition of the skin.

5. It permits full functional activity in his daily vocation, including the bath.

6. Troublesome and frequent dressings are eliminated.

7. It requires no hospitalization and the dressings are not expensive, making this treatment highly economical.

8. The ulcer is kept bathed in its own secretion, begins at once to heal, and, upon removal of the bandage, is found to be almost odorless, probably due to the natural development of a bacteriophage.

9. The continuous compression of this bandage brings about a partial or complete collapse and obliteration of both the superficial and deep varicosities, thereby improving the general circulation of the limb.

10. After a few weeks of treatment, the ulcer is usually healed and there is left a supple, non-adherent, smooth scar which

is rarely obtained by any other method of treatment.

11. A very distinct advantage of this special bandage over ordinary adhesive tape is that it does not irritate the skin, and the patient does not dread its re-application.

12. If a supplementary skin graft to the ulcer, or an injection of certain segments of resistant veins becomes necessary, the leg has by this previous treatment been put in a most favorable condition for the success of this operation. This dressing also serves admirably for the retention of skin grafts.

Foot Note: This adhesive tape is an excellent retainer for patch skin tests.

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#### LIPODYSTROPHY: ATROPHY AND TUMEFAC- TION OF SUBCUTANEOUS TISSUE DUE TO INSULIN INJECTIONS

Albert H. Rowe and Olin H. Garrison, Oakland, Calif. (*Journal A. M. A.*, July 2, 1932), review the literature on lipodystrophy following insulin injections and report that during the last nine years they have observed two instances of this condition. Recently they have carefully examined the tissues of fifty patients whose ages varied from 7 to 79, with an average of 40.6 years, and who had taken insulin for an average of one year. Definite atrophy was observed in two additional cases. The absence of atrophic reaction in more of the patients may be due to the emphasis the authors have always laid on the importance of the variation in the site of injection. Definite fatty atrophy of subcutaneous tissue occurred in one patient who had received pollen therapy in the same area once a week for ten months. This corroborates the opinion of Lawrence that mechanical injury of the fatty cells may be the true cause of the atrophy.



## THE MEDICAL PROFESSION AND SOCIAL PROBLEMS\*

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*Mr. President, Ladies and Gentlemen:*

Through the courtesy of my associates, the agreeable duty of extending formal welcome to you has been assigned to me on several occasions, but never before under such circumstances as exist today. Since the last time I spoke to you in this capacity, the social structure of the world has been profoundly disturbed. Only through the industry and wisdom of thinking people can there be a restoration of poise and integrity. To that end I want to talk to you a few minutes about what I conceive to be an imperative duty on our part, and an extraordinary opportunity to render service to our fellowmen.

During the life of this association there have been varying vicissitudes—vicissitudes for better, sometimes, and sometimes for worse; sometimes vicissitudes bringing hope and encouragement, and sometimes surrounded by leaden skies, but never before has there been a time when it was so necessary for intelligent people to think and to reason and to act with decision and good judgment. I have never seen the time when it was so palpably necessary for the members of the medical profession to realize that they have a duty to perform for society; never before so necessary to make it clear and plain that they are entirely independent of the seductive influences and rank sophisms of designing and corrupt men.

I am not a reformer. I am simply a member of a profession to which I bound myself in my youth, and to which I owe allegiance. You are members of that profession. We—all of us—have assumed its responsibilities, and we have accepted the honors which it has conferred upon us. I come, therefore, not to reform, but to call the attention of my profession to the principles upon which it is founded, to its inherent dignity, and to its tremendous latent power for good.

The last twenty-five years marks a period in which the world has been figuratively turned upside down. During that period the most disastrous war of all history directly carried devastation and dis-

tress into nearly every nation. And even the nations too far-seeing and too wise to be led into the maelstrom of madness, like Holland and Switzerland and the Scandinavian countries, suffered indirectly.

Since the war unimaginable improvements have been made in the means of transportation, but too often they have been used to further the schemes of the selfish and the wicked.

Machine power has progressively displaced man power, and the chief result is a vast number of idle and hungry men, women and children.

In that same period wealth has been more and more concentrated into the hands of comparatively few, while those who compose the bone and sinew of citizenship struggle painfully to avert imminent disaster.

Agriculture has been developed so that there are bursting bins and barns everywhere, and yet millions are barely able to keep soul and body together.

Tax burden has been piled upon tax burden until that most precious of all material possessions—the home—has been lost to countless thousands, and as they go out and leave behind childhood's dreams and tender memories they join the bewildered throng gazing toward heaven in blind confusion; and yet, with all the taxes wrung from the impoverished and the helpless, there is failure of governmental help and governmental protection.

All these things have come to pass, and no longer does any man dare to say that the examples are overdrawn. The evidences of decadence of society are so plain that everyone who is not intellectually blind can see and understand.

But the most serious result of such a disastrous and anomalous situation is the psychology that has been created—a psychology based upon the wreck and ruin of human beings. In the case of multitudes whose burdens are too heavy to be carried, it is a psychology which puts their loyalty as citizens to bitter test. In the case of many who have the double burden of dire poverty and old age upon them, it is the psychology of utter despair.

Another disastrous result of the psychology of these days is the loss of the spirit of friendliness and co-operation. When we were children we were taught that there were other things better than

\*Address of Welcome to Oklahoma State Medical Association, Oklahoma City, May 16, 1933, by Dr. LeRoy Long, Oklahoma City.

gold, but now nothing is more obvious than that the individual without money is an unwanted and shunned individual. It may be that his substance has been exhausted in providing for sick and helpless dependents—it matters not—only money furnishes an open sesame to recognition—and he has no money.

Shall we finally emerge from this destructive psychological situation? There are grounds for hope that we shall. But we will not do it until the intelligent and thinking people of this country and of this world do their duty, and by their mighty influence destroy the power of demagogues and hypocrites; of anarchists and communists and protected thieves, because they—all of them—belong to the same class—the class that deceives and cheats and steals and heaps up abuse.

And who are these intelligent and thinking people of whom I speak? They are legion and are found in every legitimate occupation, but I know of no great group better fitted for the task than the members of the medical profession, provided they keep always before them the ideals and purposes of their profession. They are fitted for it because they have been trained to think, to reason, to analyze. They are fitted for it because they are brought into intimate contact with human needs and human frailties. They are fitted for it because they have the respect and confidence of those to whom they render service. Because of all these things a united medical profession can, if it will, exert unlimited influence in stabilizing the thoughts and actions of the people of this country and of the world.

This is my conception of the role of the medical profession, but in order to carry it out we must purify ourselves and devote ourselves to the task. To be able to carry out that role we must not look upon it as a vague and abstract figment of the imagination, but as a concrete duty. In order to carry it out we must be faithful, and must remember, in the words of Edmund Burke, that "No man can mortgage his injustice as a pawn for fidelity."

It is in this spirit that I, in the name of Oklahoma County Medical Association, greet you and welcome you. I leave it to you to consider the duty that is ours. I leave it to you, my confreres, to ponder the glory that may be ours.

#### DOES PRIMARY TUBERCULOSIS INFECTION AFFORD ADEQUATE PROTECTION AGAINST CONSUMPTION?

Chester A. Stewart, Minneapolis (Journal A. M. A., April 8, 1933), presents a paper based on observations on eighty-four children found in a series of more than 10,000 cases examined and followed up during the past decade at Lymanhurst. These eighty-four children included certain patients who had reinfection pulmonary tuberculosis (consumption) when first examined, as well as other children in whom phthisis developed during the period of observation. Of this group, thirty-six children (approximately 43 per cent) had primary tuberculosis exclusively for various periods up to ten years and then developed the reinfection type of pulmonary tuberculosis (consumption). Primary tuberculous infections (which produce allergy to tuberculin), therefore, do not prevent consumption from developing at some later date. Twenty-five children (approximately 30 per cent) had primary or reinfection pulmonary tuberculosis coexisting when first examined. The author interprets these observations as contributing circumstantial evidence that initial infections by *Mycobacterium tuberculosis* do not confer an immunity that prevents consumption. Apparently the opinion that infected persons are protected must be abandoned until indisputable proof to support this contention is found. No child allergic to tuberculin has been found during the past decade in whom a second crop of lesions typical of primary tuberculosis has developed. Apparently the human body can experience the benign primary form of the disease only once. When new tuberculous infiltrations appear in the lungs of children who previously had positive tuberculin reactions, these newly developed lesions are roentgenologically and clinically characteristic of reinfection pulmonary tuberculosis (phthisis). Apparently, patients with primary tuberculosis become consumptive if reinfections occur in dosage sufficient to produce intrapulmonary lesions. This applies to cases of primary tuberculosis whether symptoms and lesions demonstrable roentgenographically are present or absent. The author's follow-up studies over a period of ten years indicate that primary tuberculous infections are distinctly detrimental in that they alter the normal resistance to tuberculosis present in the uncontaminated human body in such a manner that, instead of again being able to experience the benign primary type of tuberculosis, the patient is doomed thereafter to develop consumption if successfully reinfected from exogenous or endogenous sources. The only method by which consumption can be prevented is through the prevention of tuberculous infections. Active immunization against tuberculosis with attenuated bacilli may not be a safe procedure if this method immunologically duplicates the changes that accidental human contact infection produces. The author submits a plan of classification for various types of tuberculosis together with comments relative to revisions in two brochures distributed by the National Tuberculosis Association, each of which seems to conform with his conservative interpretations of the observations made during the past ten years.





*President 1933-34*

TRACEY HOLLAND McCARLEY, A.B., M.D., F.A.C.P.

Born at Auburn, Kentucky, October 6, 1883.

Attended public schools and preparatory school at Auburn, Kentucky.  
Graduated with A.B. degree from Bethel College, Russellville, Kentucky, 1902.

Graduated from the Medical Department of the University of Louisville, 1907.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

Issued Monthly at Muskogee, Oklahoma, under  
direction of the Council.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief  
525-526 Commercial National Building,  
Muskogee, Oklahoma.

DR. P. P. NESBITT.....Associate Editor  
Medical Arts Building, Tulsa, Okla

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Reprints of original articles will be supplied at actual cost provided requests for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

#### UNDULANT FEVER

For years physicians of Oklahoma have been primarily concerned with the commoner fevers, that is, typhoid, malaria, and the various conditions produced by sepsis. Only until within the last few years have cases of undulant fever been positively diagnosed and differentiated from other types. Whether our physicians are becoming more accurate and watchful or not, the disease seems to be slightly increasing.

In April, 1929<sup>1</sup>, Drs. D. O. Smith, and Samuel Goodman, Tulsa, reported three cases of malta fever. The disease is also known as Mediterranean, Cypress, Bruce's

Septicemia, Neapolitan fever, Gibraltar fever, Danube fever, Septicemial Melitensis (it will be noted with the naming of this disease, the various names above indicate that the habitat of the fever was around the Mediterranean). However, it has been found in many of the United States, including Oklahoma.

Victor G. Hiser<sup>2</sup>, states that "Malta fever is an ancient disease. Hippocrates describes a long continued fever with short apyrexial intervals, lasting one hundred twenty days, which in all probability was Malta fever." Hiser states that treatment is purely systematic, that vaccines and serums have not been successful. Nevertheless the use of vaccines have seemed to shorten the course of the disease.

The diagnosis can only be made in a laboratory by an agglutination test, which is made from killed virus, which is a suspension of the specific bacteria taken from a known case. This desensitized vaccine is preferred as other vaccines heretofore used not desensitized have produced very severe reactions.

At best the disease is most baffling. Almost invariably the physician diagnoses the case as something else, treats it according, only to find his treatment unsuccessful. The onset of the disease is gradual, the predominating characteristic being fever without immediate evident cause, often not stopping the patient's work, but the temperature may rise to a very high degree.

Attention is only called to this due to the fact that without question it exists in Oklahoma, that invariably it has been treated for long periods as some other condition before the true cause was ascertained. Elimination of typhoid, malaria, and the various septic conditions should at once place the physician on his guard in order that he may not later have the embarrassment of having treated a case for something that did not exist.

1. Smith & Goodman, Journal of the Oklahoma State Medical Association, April, 1929.

2. Cecil's Text Book of Medicine.

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#### ANNUAL SESSION ATTENDANCE— THE TYPE WE DO NOT LIKE

Notwithstanding the very good attendance we had at the Oklahoma City session, we have to regretfully note two types of physicians who were not present,



though they had good concrete roads over which to ride, and we are satisfied that time must have hung heavily upon their hands as they graced their back-end drug store offices. Some of these men were within from fifty to one hundred miles of the city. The writer firmly believes they thoroughly need constant brushing up in all matters surgical and medical, and knows they would have obtained a vast fund of information had they given the few hours necessary involved in the trip. They were absent.

The other type is the physician upon whom we have expended or stand to expend considerable sums of money over alleged malpractice suits brought against them, too many of them were absent.

We note that there were in attendance many of the very busiest men from various cities over the state, consequently we are unable to understand the psychology or line of reasoning which causes these men to absent themselves from such a high-class meeting as the Oklahoma City session proved to be.

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#### INSURANCE REPORTS FOR NOTHING

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In the past few years many insurance companies have been "riding" physicians, gullible and otherwise, in the matter of having them fill out from their knowledge, reports of various lengths, as to the physical condition of patients they have attended. For this, of course, they pay nothing.

The Council at Oklahoma City recommended opposition to these practices and reported to the House of Delegates its opposition to them, and the House of Delegates approved the report. This means that when these fly-by-night and other type of insurance companies send you a blank to fill out, that you are to return it unfilled with the suggestion that your work and time is your only means of livelihood and that filling out insurance blanks is a matter for which you should be paid, and that you will fill the blank out upon their assurance that they will pay for the service.

This seems to be eminently correct, the company certainly receives cash on these cases and there is no reason why the physician should not be paid for his services.

#### ANAESTHETICS—WHO MAY GIVE THEM

---

In the House of Delegates at Oklahoma City, a statement was made that "only registered physicians might legally administer anaesthetics." After some discussion it was directed that the secretary get a legal opinion upon the matter.

The gist of the opinion is this: There is no law stating that only registered physicians may administer anaesthetics. By inference, however, the physician is requested to secure one of skill, ability and training to administer such anaesthetics.

This is common sense, as the physician is entirely responsible for the conduct of the operation throughout, selection of his own anaesthetist as well as assistants. Apparently this should settle the matter so far as the Oklahoma law is concerned.

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#### THE ANNUAL SESSION

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The annual session, just completed in Oklahoma City, will undoubtedly go down on record as the best ever held by our organization.

The exhibits were beautifully arranged, and so far as the writer knows there was not a complaint from any exhibitor as to the arrangements.

In one or two instances the sections overlapped other meetings slightly, which meetings the hotel has been holding for years. We could hardly blame the hotel for this as these bodies are their constant supporters and the delay did not amount to much. Of course we cannot have every meeting absolutely perfect as to details, but it can be truthfully said that there was less friction at this meeting than at any ever held heretofore.

Five hundred seventy were able to find time to absent themselves from their various businesses in order to attend this meeting.

Oklahoma City and the physicians having charge of the arrangements there are to be congratulated upon their not "fumbling the ball." They certainly worked hard, were up on their toes at all times and deserve the praise of everyone attending the meeting.

## THE CLIMATIC EFFECTS IN THE TREATMENT OF TUBERCULOSIS

For many years in the past it was considered positively essential by many men in the profession, where the patient could possibly afford such, that certain climate would give more benefits than home treatment, especially selected were the Adirondacks of New York, the hills of North Carolina, the Rocky Mountain Range, New Mexico and Arizona. But in medicine the pendulum swings back and forth, and in this instance there grew up a strong school who believed that climatic conditions had little or nothing to do with the treatment of tuberculosis. It was generally agreed, however, that climate with the most days of sunshine, that is a rainless country, was the best for pulmonary tuberculosis. Then it was discovered, or thought to be discovered that those who were "cured" or reached the stage of arrestment would likely have recurrences should they return to lower or different altitudes from that in which they had received their "cure." There is still a difference of opinion, and among good men, as to the effects of climate, but so far as the writer knows the idea that the disease may more easily recur if the patient returns to his former environment still prevails.

It will be recalled that Trudeau, perhaps one of the greatest of all authorities on tuberculosis, moved to Saranac Lake many years ago, with a hopeless prognosis and the given opinion that he could not recover. He selected Saranac Lake because it was out in the woods, in the fresh air, and beautifully located. It is said that his location at that point eventually brought the value of land around that neighborhood up from \$25.00 to \$1,000.00 an acre, and there is no doubt that thousands of people had their cases arrested by long stays at Saranac Lake.

In considering the question of climate, however, it must always be remembered that the patient goes for a specific purpose, he generally knows the diet he should follow and that he should get as much rest as possible. This, in the opinion of the writer, accounts for the success attained by many of these resorts. Various authorities still maintain that climate in the points above mentioned, bears an important point in the successful handling of pulmonary tuberculosis. However, tuberculosis undoubtedly may be "cured" or

arrested in any climate, provided the systematic and proper regimen as to rest, food, the banishment of worry and other factors is consistently followed.

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### Editorial Notes—Personal and General

DR. A. N. DEATON, Wewoka, who has been ill, is reported improving.

DR. J. P. SUDDERTH, Nowata, one of the oldest men in years of service in Northeastern Oklahoma, has been ill for several weeks.

DR. ROY FISHER, Frederick, was one of the members of the April class of Flight Surgeons, graduated by the School of Aviation Medicine, U. S. Army, Randolph Field, Texas.

MUSKOGEE COUNTY MEDICAL SOCIETY held its regular meeting May 22nd, 1933. Dr. E. S. Ferguson of Oklahoma City, spoke on "Sympathetic Ophthalmia." Dr. Dick Lowry, Oklahoma City, spoke on "Bandl's Ring Dystocia."

DR. HENRY H. TURNER, Oklahoma City, was one of the guest speakers of the Arkansas State Medical Association meeting in Hot Springs, May 2, 3, 4, and delivered an illustrated lecture before the General Session on "The Growth and Sex Hormones of the Anterior Pituitary."

MUSKOGEE COUNTY MEDICAL SOCIETY met at Muskogee, May 8, 1933, with the following program:

"Upper Respiratory Infections in Children," Hugh Evans, Tulsa.

"New Methods in Treating Seasonal Hay Fever," E. Rankin Denny, Tulsa.

DR. GEORGE W. CRILE, Cleveland, writes as follows:

My Dear Doctor Thompson:

I am taking this opportunity to express to you again my keen appreciation of all that you did to make my stay in Oklahoma City so pleasant.

I very much enjoyed the meeting. It was a pleasure to me to with you on this occasion and to meet you and the members of your Association.

DR. S. R. CUNNINGHAM, Oklahoma City, Professor of Orthopedic Surgery, University Medical College, attended the American Orthopedic Session in Washington, the second week in May, reading a paper on "Fracture of the Ulna, with Dislocation of the Head of the Radius."

Dr. Cunningham has perfected a film slide to be used in preference to glass lantern slides. It has attracted a great deal of attention among the men who do a great deal of lecturing.

MORNINGSIDE HOSPITAL, Tulsa, is creating a committee on fractures, the function being to elevate, improve, and standardize, secure better "end results," evaluate equipments and secure



the most practical to supervise training of nurses and attendants in the care of fracture cases, lessen malpractice suits and aid the attending physician by offering consultation. Except in rare instances little or no charge is to be made, the fee, if collected, shall be used for new equipment, books, research work and should not be acquired by individual members of the committee. This arrangement, of course, does not prohibit the charging of fee adequate to the patient's means.

### HALF-BAKED PRACTITIONER ENJOINED

The District Court of Hennepin County, Minnesota, recently sustained the demurrer interposed by the Minnesota State Board of Medical Examiners brought against one John Granger, prohibiting him from further action. Granger had a fine line which consisted of a contract which gave the holder the right to four periodic urine analyses during the year, with additional analyses when determined necessary. The service also included one blood pressure test annually to subscribers if that seemed necessary and desirable. It is said that he was netting about \$12,000 a year. He employed a physician to make the urinalyses. That he was not licensed to practice medicine or registered under the Basic Science Law of Minnesota, the board contended that he was unlawfully engaged in the practice of healing, which condition the Court sustained.

### SOUTHERN OKLAHOMA MEDICAL ASSOCIATION'S NINETEENTH QUARTERLY SESSION

Will convene at Medicine Park, Oklahoma, Medicine Park Hotel, June 6, 1933.

#### LAWTON LOCAL COMMITTEES

Scientific Program: Dr. L. W. Ferguson, Dr. G. S. Barger, Dr. E. Brent Mitchell.

Entertainment: Dr. E. B. Dunlap, Dr. L. T. Gooch, Dr. J. P. Gibson, Dr. L. W. Ferguson, Dr. T. R. Lutner, Dr. W. J. Mason.

Ladies' Entertainment: Mrs. E. Brent Mitchell, Mrs. G. S. Barger, Mrs. H. A. Angus, Mrs. W. J. Mason, Mrs. E. B. Dunlap.

Officers: President, Dr. J. L. Holland, Madill; President Emeritus, Dr. A. J. Weedn, Duncan; President-Elect, Dr. J. W. Nieweg, Duncan; Secretary-Treasurer, Dr. B. H. Burnett, Duncan.

Vice-Presidents: Caddo County, Dr. P. H. Anderson, Anadarko; Carter County, Dr. W. R. Mote, Ardmore; Cleveland County, Dr. D. G. Willard, Norman; Comanche County, Dr. E. B. Mitchell, Lawton; Cotton County, Dr. G. W. Baker, Walters; Garvin County, Dr. R. H. Lindsey, Pauls Valley; Grady County, Dr. W. H. Livermore, Chickasha; Jefferson County, Dr. D. B. Collins, Waurika; Johnson County, Dr. McDonald Looney, Marietta; Marshall County, Dr. P. F. Robinson, Madill; McClain County, Dr. W. C. McCurdy, Purcell; Murray County, Dr. F. E. Sadler, Sulphur; Pontotoc County, Dr. Alfred Sugg, Ada; Seminole County, Dr. A. F. Geison, Konawa; Stephens County, Dr. J. L. Patterson, Duncan.

#### STANDING COMMITTEES

Scientific Work: Dr. C. L. Johnson, Pauls

Valley; Dr. A. R. Sugg, Ada; Dr. W. H. Bailey, Oklahoma City.

Public Policy and Legislation: Dr. G. E. Johnson, Ardmore; Dr. J. M. Byrum, Shawnee; Dr. G. S. Barger, Purcell.

Medical Education and Hospitals: Dr. J. L. Patterson, Duncan; Dr. D. W. Griffin, Norman; Dr. W. H. Livermore, Chickasha.

Medical Economics: Dr. P. H. Anderson, Anadarko; Dr. W. M. Browning, Waurika; Dr. C. N. Talley, Marlow.

Legislative Committee—One Member From Each Congressional District: No. 1 Dr. F. S. Clinton, Tulsa; No. 2 Dr. W. P. Fite, Muskogee; No. 3 Dr. J. S. Fulton, Atoka; No. 4 Dr. Guy Van Sandt, Wewoka; No. 5 Dr. G. N. Bilby, Oklahoma City; No. 6 Dr. J. B. Miles, Anadarko; No. 7 Dr. V. C. Tisdal, Elk City; No. 8 Dr. D. S. Harris, Drummond.

To Handle the Matter of Doctor's Day: Dr. B. H. Cooley, Norman; Dr. L. E. Emanuel, Chickasha; Dr. P. H. Anderson, Anadarko.

#### DOCTORS' ENTERTAINMENT

Golf: The course will be open to all visiting Doctors. (Lawton Country Club). Doctors wishing to play golf should bring their own clubs. Matches will be arranged, and will tee off at 10:00 a. m. If you are expecting to play, kindly get in touch with Dr. E. B. Dunlap, Lawton.

Fishing: Lake Lawtonka and Medicine Park. We are arranging for a free fishing permit for all visiting Doctors, so bring your fishing tackle, and have your State license. Fishing is better in the morning. Those wishing to fish please get in touch with Dr. W. J. Mason, Lawton.

Swimming: The swimming pool at Medicine Park is open to all visiting Doctors. An early morning plunge might make you feel better.

#### LADIES' ENTERTAINMENT

Golf: Ladies wishing to play may do so at the Lawton Country Club.

Swimming: Any time.

Scenic Drives: These will be arranged for the ladies wishing to go.

Tea and Bridge: Afternoon at the Medicine Park Hotel.

#### SCIENTIFIC PROGRAM

1:30—2:00 P. M.—President's Address, Dr. J. L. Holland, Madill.

2:00—2:30 P. M.—"Chronic Urethritis of the Gonococcic Type and When Cured," Dr. G. E. Johnson, Ardmore.

Discussion—Dr. H. M. McClure, Chickasha.

2:30—3:15 P. M.—"Cirroid Aneurism," Dr. Pat Fite, Muskogee.

Discussion—Dr. Horton Casparis, Nashville, Tenn., and Dr. LeRoy Long, Sr., Oklahoma City.

4:00—4:15 P. M.—Recess.

4:15—5:15 P. M.—"Heart Disease, Its Diagnosis and Treatment," Dr. W. W. Rucks, Jr., Oklahoma City.

Discussion—Dr. L. E. Woods, Chickasha.

5:15—6:15 P. M.—"Bladder Discomfort In the Female," Dr. O. T. Kimbrough, Wichita Falls, Texas.

Discussion—Dr. J. E. Childers, Tipton.

7:00—8:00 P. M.—Banquet.

8:00—10:00 P. M.—"Skin Grafting," Dr. John F. Burton, Oklahoma City.

Discussion: Dr. A. L. Blesh, Oklahoma City.

Banquet: 7:00 P. M., Medicine Park Hotel, price 75c per plate.

Remember the Date: June 6th, 1933, Place: Medicine Park.

Come! And Bring Your Fishing Tackle, Bathing Suit, Golf Bag, Your Appetite and Your Good Humor!

#### DOCTOR EDGAR ARMISTEAD DULIN

Dr. Edgar Armistead Dulin was born December 19, 1843, in Washington, D. C. He graduated from the Medical Department of Georgetown University in Washington in 1865. Was a surgeon in U. S. Navy for four years, then removed to Lexington, Mo., where he practiced thirteen years. Removed to Nevada, Mo., in 1882, where he practiced forty-seven years, retiring in 1929, and removing to Bartlesville, Okla., where he died April 7, 1933, of heart disease. He was Mayor of Nevada for six years, was an active member of the Baptist Church and was a member of the Masonic and Knights of Pythias fraternal orders. Member of Vernon County, Missouri, and Missouri State Medical Associations and of A. M. A.; was also an honorary member of the Washington County Medical Society, Bartlesville, Okla. He was married in Lexington, Missouri, in 1872, to Miss Flora N. Lightner, who survives him. He is also survived by one daughter, Mrs. W. H. Gill of Bartlesville, Oklahoma.

#### DOCTOR FRANKLIN E. MURPHY

The recent death of Dr. F. E. Murphy of Kansas City, at the age of 66 years, will bring regret, but with it many pleasant memories to hundreds of Oklahoma and Kansas physicians, who knew him as Secretary of the old Kansas City Medical College a quarter of century and more ago. Perhaps no medical school produced such a friend, kindly advisor, and helper to the medical student as was Dr. Murphy. Possessed with a placid disposition, an alert mind, and a sympathetic attitude to the problems and worries of the medical student, he dies mourned by all those who knew him. His death brings extreme regret to scores of Southwestern physicians.

### TRANSACTIONS OF THE FORTY-FIRST ANNUAL SESSION OKLAHOMA STATE MEDICAL ASSOCIATION, OKLAHOMA CITY, MAY 15, 16, 17, 1933

THE COUNCIL  
MAY 15, 1933, 3:00 P. M.

Called to order by the President, Dr. R. M. Anderson, Shawnee.

Present: Doctors, R. M. Anderson, president; T. H. McCarley, president-elect, McAlester; C. A. Thompson, secretary-treasurer-editor, Muskogee; W. M. Gallaher, Shawnee; W. A. Howard, Chelsea; L. S. Willour, McAlester; Frank McGregor, Mangum; A. B. Chase, Oklahoma City; D. Long, Duncan; O. E. Templin, Alva; (McLain Rogers, Clinton; F. M. Adams, Vinita; L. H. Ritzhaupt, Guthrie, by invitation).

Minutes of the last meeting, held at Muskogee, December 11, 1932, were read, and approved.

The report of the Secretary-Treasurer-Editor was read, approved and accepted.

It was moved that if it was found that Dr. C. A. Thompson was unable to attend the Milwaukee meeting of the American Medical Association, that Dr. L. S. Willour be designated to take his place.

The motion carried.

Enactment of the Basic Science Law was discussed, Dr. J. S. Fulton, Atoka, Chairman of the Legislative Committee, being the chief speaker.

It was moved by Dr. L. S. Willour, McAlester, that all such legislation as Basic Science Law be left to the Committee on Legislation.

The motion carried.

Dr. L. S. Willour read the report of the activities of that part of the Extension Bureau work applying to Oklahoma physicians. The Committee being, Doctors L. S. Willour, Chairman; R. N. Holcombe, Muskogee; Mr. L. W. Kibler, Director, Norman.

A motion was made by Dr. L. S. Willour, that \$850.00 be appropriated, if a faculty of eight is used, and \$700.00, if a faculty of six is used. The motion carried unanimously.

A motion was made by Dr. W. A. How-



ard, Chelsea, that \$50.00 be paid in the case of Medical Defense, regarding suit pending against Dr. Paul J. Craden, of El Reno, if necessary.

The motion carried.

It was moved by Dr. C. A. Thompson that the Council go on record as opposing the signing or issuance of what is known as non-standard Life Insurance Reports. The motion carried.

The motion was then made and adopted that the Council adjourn, to meet again upon the call of the President, if found necessary.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### COUNCIL REPORT

To The House of Delegates:

The Council of the Oklahoma State Medical Association begs leave to submit the following report:

1. That the books of the Secretary-Treasurer-Editor, have been audited, found correct, and approved.

2. It is strongly suggested that every member of a County Society here, including Delegates, Councilors, and others, return to his own county with the determination that he will, so far as possible, insist on purchasing goods and material from those who support us as advertisers, all things being equal.

3. The Committee on Post-Graduate Extension Teaching has made a most admirable report. It shows that the State Medical Association invested \$770.80; that there was an attendance of 698, costing the State Association about \$1.00 per person, for these courses. There was recorded an attendance of 1137 as attending the Cancer Teaching Clinics; there was also an attendance of about 57 physicians at a meeting held in the Southeastern portion of the State, at Hugo; there was also an attendance of some 80 physicians at a meeting held in the Panhandle, that is, Texas, Cimarron, and Beaver counties.

4. The Council strongly urges every member of this Association to refrain from signing or participating in any manner in the making up or issuance of what is known as non-medical insurance examinations, that is, in that type of cases where an adequate fee is not paid and no physical examination is made.

Respectfully submitted,

R. M. ANDERSON,  
President.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### HOUSE OF DELEGATES

MAY 15, 1933.

Called to order by the President, Dr. R. M. Anderson, Shawnee.

Roll call of Delegates by counties by the Secretary, Dr. C. A. Thompson, Muskogee.

Dr. Anderson. Shall we have the minutes of the last regular meeting read?

Dr. L. S. Willour, McAlester: I make a motion that the reading of the minutes be dispensed with, as they were published in the June Journal.

This motion was seconded and carried.

An addition to the Secretary's report was read by Dr. C. M. Pounders of Oklahoma City, as follows:

"In addition to my report I have to remind you that the Constitution and By-Laws provides for the appointment, in every county, a legislative committee. Very few of them have paid the slightest attention to the request that such committee be appointed. You can readily see that we will be unable to do anything in a legislative way unless we can have the cooperative aid through physicians from every county in the State.

Please remember, when you get home, and see to it that a competent—he need not be necessarily, a good physician, but he should be a man who can approach his legislative representative and ask that certain acts be passed. He should know to whom to appeal, organize not only his own patients, but induce others to organize theirs, and cooperate in the enactment of the proper legislation."

#### Advertising

I have repeatedly called attention to the fact that where goods and prices are of the same quality we should by all means patronize those houses who aid in the publication of our Journal. This is not being done. Many detail-men walk into a physician's office, load him up with samples, often inducing him to use drugs or compounds, the effects of which are unknown, or to purchase them directly.

Every County Society of the State should make it a point to see that their members ask the detail-man, point blank, "do you advertise in the Journal of the Oklahoma State Medical Association."

In some instances this is not necessary, as they advertise in the Journal of the A. M. A., but the point is, we should support those who support us, and unless we do so our advertising receipts are not going to be what they should be.

Every member should first attempt to buy from our advertisers, if they cannot supply him in quantity, price and quality, then of course he is at liberty to go to whom he pleases.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

Dr. R. S. MacCabe, Oklahoma City: Mr. President and members of the House of Delegates, I am not a member of the House of Delegates but I am a member of the Oklahoma State Medical Society. In the State of Oklahoma we have a law which states that all anesthesia shall be ad-

ministered only by registered physicians. We who have been practicing the giving of anesthetics have had to compete at different times with nurses. Two hospitals in this town use nurses for their anesthetics. This is not in order with the law. I think we should try and see that this law is enforced and that anesthetics shall be given only by registered physicians, not in competition with nurses that are not trained in medicine. The surgeon seems to be and is responsible for whatever goes on in the operating room, however, there are many of us doctors who have specialized in anesthetics and have given it all our time and all our work, and we do not like to compete with nurses, and we wish this Society to investigate this and see that the law is enforced and nurses not be permitted to give anesthetics.

Dr. Thompson: Are you sure that is in the law?

Dr. MacCabe: I can't quote the law, but that is in the law. I have read that only doctors shall be allowed to give anesthetics. It is one of the special branches of medicine.

Dr. Thompson: I would suggest that this be taken up in the counties concerned.

Dr. MacCabe: You mean it should be taken up in each county?

Dr. Thompson: Certainly. No one has a right to go into another county and prosecute. How about this, Dr. White? You have had a great deal of experience in this line.

Dr. J. Hutchings White, Muskogee: According to the law it is not necessary to have a doctor give the anesthetic. This matter was investigated some years ago, and anyone can give an anesthetic under the direction of a doctor. The doctor who is handling the case is the responsible party. I think the doctor's ground well taken and that such things as that should be carried on by the medical profession solely and not by those who are not doctors.

Dr. MacCabe: To whom can we go with this if not our State Society?

Dr. Thompson: Find out about the law first.

Dr. H. C. Weber, Bartlesville: Wouldn't that be up to the Executive Committee of the Staff of each hospital this is being done in?

Dr. Thompson: Maybe the hospitals this is being done in do not have an Executive Committee.

Dr. MacCabe: This is a special branch of medicine.

Dr. Thompson: That is not the question. It is a question of law.

Dr. Horace Reed, Oklahoma City: Gentlemen, I move that some officer of the Association or the President ask the Attorney-General what the law is and then let the Secretary publish it in the Journal.

This motion was seconded.

Dr. A. E. Aisenstadt, Picher: Regardless of the merits connected with this motion, if it is a matter concerned with violation of the law, this Society has nothing to do with its enforcement, and I believe the doctor should go to the county attorney. So far as its merits are concerned we might discuss it and create sentiment in favor of doctors only giving anesthetics, but this doc-

tor comes in here with a question of violation of law and I do not believe the motion is in order.

Dr. Reed: I am not discussing the merits of the case at all. I am merely asking that the law be looked up with the Attorney-General and published in the Journal.

The motion was voted upon, and carried.

Dr. S. D. Neely, Muskogee: I have here three resolutions to come before the House of Delegates.

Dr. L. S. Willour, McAlester: I move that these resolutions be referred to a Resolutions Committee to be appointed by the President and brought before this House of Delegates tomorrow morning.

Dr. Reed: I think we are entitled to know what these resolutions are before they go to the Committee.

Dr. Willour: I have no objection to reading them.

Resolution on Membership, Motion for Basic Science Act, and Registration of all Licensed practitioners of the healing art were read by Dr. C. M. Pounders.

The members of Resolution Committee appointed by Dr. Anderson were Dr. L. S. Willour, Dr. S. D. Neely, and Dr. J. L. Walker.

Dr. Willour: Mr. President, as it was impossible for me to get the data necessary to make a report of the Committee on Medical Extension in time that it might be published in the Journal, I would like to take up a few minutes of the time to read this to you (read report), I am going to ask at this time that a copy of this bulletin be given to every member of the House of Delegates. Mr. Kibler has them here. The Secretary of each County Medical Society will receive one of these bulletins. I want to say that this bulletin is issued at no expense to the Medical Society. The editing and printing are done by the standing Extension Committee at Oklahoma City. This chart, you will notice, indicates the centers in which post-graduate work has been done. In this map dots will be placed around the star, showing the number in attendance in post-graduate courses. The larger chart shows the centers in which films have been shown throughout the year. Three films were shown each at Guymon and Woodward, and we feel that this was well worth while.

I want to say a word relative to extension work from here out. We had a meeting this morning in which programs were outlined for next year to be given in five or six centers. It seems to the Committee advisable that this next year's work be on internal medicine and pediatrics. The subjects have been selected and the members of the faculty have also been selected. We are sure of getting these but for fear we might not we have arranged for first, second and third choices, and I can assure you that we will have an excellent post-graduate course. The Council today appropriated for next year the same amount expended in the past year. Relative to the Extension Department at the University, we do not know whether under the economy law it will continue to exist. However, one of our Councilors has advised the Governor about this Extension work, and he has said that he would not oppose the appropriation of about



three thousand dollars for Medical Extension. He has also advised the Chairman of the Board of Regents and he has told us that he would not oppose it. We are going to have a conference with Dr. Bizzell next Friday afternoon at 5:00 o'clock, at which time we are going to put this matter before him. We hope to get this appropriation, and this Committee is going to put forth every effort to convey to Dr. Bizzell that this is a good thing to do.

Dr. J. S. Fulton, Atoka: Probably I should have added something sooner in reference to part of Dr. Willour's report. I think it is I that he refers to about seeing the Governor. He put that rather stronger than I would. The Governor said, "I won't tell you what I will do about it but I will look into it and will do what is right about it, but I want to call your attention to the fact that three thousand dollars is not so much money but when you take two thousand or three thousand or four thousand dollars in five or seven or eight places you will get into a hell of a lot of money, so I will do just what I think is advisable." The Governor did not commit himself, and did not say that he would not oppose it. In the first place, I think the Governor felt that he had the say-so, but one of the leading Senators of the Senate told me that the Governor did not have the say-so, so there is a difference of opinions. Senator McDonald from Durant stated that it will not come under the Governor's care, but the Governor no doubt will have something to say about how the money is spent.

Dr. Anderson: I heard a Democrat tell a Republican the other day, "We are going to stuff good times down the throats of you Republicans whether you want it or not." You know what he meant. I think this House of Delegates should give Mr. Beaird and Mr. Kibler and Dr. Willour recognition for the fine work they have done in this extension work. It is the best thing that I know of that can be given to the physicians of Oklahoma.

Dr. Fulton: I move that a vote of thanks be extended to these men for their most efficient services in the extension work.

Motion was seconded and carried.

Dr. John F. Kuhn, Oklahoma City: I wonder if it would be out of order that this House of Delegates extend a vote of thanks to the physicians who have donated their time in giving the actual extension work. Now this has been a pure donation on the part of the physicians who have worked at this job and it has been a good hard job, therefore I make a motion that the House of Delegates extend a vote of thanks to all physicians who have donated their time to the course.

Motion seconded, carried.

Dr. Horace Reed, Oklahoma City: I move that this House of Delegates go on record as urging the President of the University to do what he can to see that this extension work be continued.

Dr. Willour: I want to second that motion. I think it is something that is well worth while. I believe that when the Committee meets with Dr. Bizzell a copy of such a resolution or motion passed by this House of Delegates would be worth something in putting over our project. I want to second that motion. Dr. Reed, would you mind writing that in a resolution?

Dr. Reed: I want Dr. Willour to write it.

Dr. Anderson. It has been moved and seconded

that this House of Delegates go on record as urging the President of the University to do what he can to aid us in extension work.

Motion carried.

Dr. E. S. Crow, Oulstee: Gentlemen, I may be out of order, but I would like the doctors to consider the proposition that is now before the Texas Medical Association in regard to the free clinics and practice of medicine in certain groups whereby they had contracts that were a great infringement on the doctor who is working for his neighborhood. I want to tell you what we are confronted by on the border line of Texas. We are absolutely giving credit work, and when it comes to free clinics and diphtheria anti-toxin and toxoid, probably some St. Louis doctor will give that medicine, drawing a good fat salary, and we are called down there to assist in it and don't get a cent. Is that fair and is that right? I am willing to do anything in a community and stand four-square, but when it comes to those doctors who come down and get money and ask us to contribute our part and spread propaganda for public health, I don't like it. I am willing to do this, but I am not willing to not get the pay.

Dr. Thompson: There is only one man here from the State Board of Health. He belongs to the Oklahoma Health Service and was born in this State.

Dr. Crow: The Texas organization has taken it up, and strongly. I want to make to this Society a statement I believe will bear me out. I have patients whom I have not charged for eight years, there hasn't been any use to charge them, and they will pass by me and go over to the county seat and spend more for gasoline than I would charge them for giving typhoid vaccine, and the same with diphtheria anti-toxin and toxoid. This is the question. What is there in it for the doctor that will do what he can to help his community? I think it should be brought up before our organization; it has been brought up in the Texas organization and brought up strongly.

Dr. Thompson: So far as these men are concerned in Muskogee, they first contact the County Health Officer and work through and with him.

Dr. Kilpatrick, Elk City: Why do they come out and ask a man to donate his time and office help and tell a man they want this stuff given free?

Dr. Thompson: I don't think that should be done. I think that it should apply only to those who are not able to pay for it.

Dr. Jas. L. Shuler, Durant: I heard of a case where the immunization treatment had been sent down there (Bryan County) to a dentist. The State school has been giving it to all teachers and pupils and I think the State Health Officer is responsible for that. I am sure that up until a few years ago that that was the rule, and then they would sometimes ask the doctors to come out and give it but most generally they just had a nurse to give it.

Dr. J. S. Fulton, Atoka: Year before last in our county they gave toxoid and anti-toxin. The treatment there was put on by a State man. He was not a doctor but he employed doctors in the county and they were paid five dollars a day. I heard no complaint about it. All the

work that has been done in our county, they paid the doctors to do it. I have not heard of any outsiders. I just recently vaccinated the schools and they gave me thirty dollars. I asked the other doctors to help me and divided it. I don't know of any outsiders coming in. It was done by the State Health Department, sending a man along to look after the business side of it.

Dr. Thompson: In the case where that dentist supervised it, complaint should be filed about it by the doctor who knows.

Dr. Crow: In our county they had a nurse that none of us had ever heard of. She was drawing a good salary and staying in a good hotel. They came down and asked us to assist to do it, and if we wouldn't or didn't want to do it, then we were told we were not cooperating in preventive medicine. I want to tell you the best periodicals we can get, denounce this because it enters on free medicine and undermines the very structure of the profession.

Dr. Thompson: Dr. Bryan, did you go down to Olustee in Jackson county?

Dr. Cecil Bryan, State Health Department: I don't remember whether I was in Olustee or not. The last time I was in Jackson county, as well as I can remember, I was on a diphtheria antitoxin campaign. That was possibly a year ago last December.

Dr. Thompson: I can see Dr. Crow's point exactly. It is a question of State medicine, and there is considerable objection to it.

Dr. Crow: In other words, I want to say, as a medical profession are we more obligated if the people have got the information? Are we under more obligation than we are to inoculate them against pneumonia or anything else? I say we are not.

Dr. Bryan: A few years back when I first went to work in public health I was under the supervision of the State Health Department but employed by the Federal Government. At that time they were putting on what we called an educational campaign for prevention of diphtheria. The slogan was "No Diphtheria in 1933."

The object of the State Health Department in putting on the program was two-fold, first to educate the people that diphtheria could be prevented, and along with that was the number that we got immunized. That was paid for by the Federal Government. The Health Department of this State has been conducting typhoid campaigns for a number of years. About July 1st, Dr. Bilby, our present Commissioner, said that the State Department was not going to put on any more immunizing campaigns, that we had educated the public to the point where they wanted it and they would go to their family physician and get it. The only thing the Health Department is doing now is giving educational talks to let the people know that it can be procured from the Health Department, that it will furnish typhoid vaccines free of charge to any doctor who writes in for it. We advocate that the public should pay the family physician for administering this, and we think if anyone is unable to pay, it should be given by the family physician without charge. We are not advocating free clinics and we insist that the patient should pay the family physician for giving it whenever he is able.

Dr. Crow: I appreciate that talk.

Dr. Oscar E. Templin, Alva: May we not hear

from the State Health Commissioner, Dr. Bilby, who is present in person?

Dr. George N. Bilby, State Health Department: Gentlemen, I am here to defend the actions of the Health Department in the past two years, and we have no apologies to make for our actions. It is true that we carried our campaigns against diphtheria, not alone to educate the people that we could immunize against one of the most dreaded diseases that we have, but also to educate the doctor in the importance of doing this. We find that the doctors have not done that. All over the State, have they the right to allow little children to die with diphtheria and not give them a chance by not educating the parents and have them bring in these children for immunization? It is because you doctors have neglected your duty. When that campaign was on in one county, I sent a man in and on the Friday before the unit was going in there to do the work the County Medical Society called a meeting and took me to a thrashing on the spot. I am willing to throw boquets when you throw boquets, but you threw stones. One doctor especially said that ever since I advocated immunization in that county, people that were able to pay were calling him up and asking him about it. I told him that if he had done his duty by the people who were able to pay he would already have told them about immunization, and if he had told them to have it and they didn't have enough confidence in him to have it, he was at fault either way. He either failed to tell them about it or else they didn't have confidence in him. We don't intend to give these campaigns year after year, but the doctors are going to have to carry their share. We are not going to have hundreds of little children die in this state when it can be prevented. Now you doctors get busy and immunize. Charge for it.

But you ought to tell the parents about it. When you deliver a baby you should tell the parents that the child should be immunized after six months and if you don't teach it you have not done your duty. If this child dies and you have neglected to tell the parents, then you are the reason for the death of that child because diphtheria is a preventive disease and it is a disgrace to allow a child to die from it. We don't intend to carry it out in a year or two years. You should charge every man and woman what you consider the most reasonable price they are able to pay. It is the cheapest thing you can do. I know one doctor who wanted eighteen dollars apiece for immunizing a family, nine dollars for each child. Do you think that is a fair price with the State furnishing the anti-toxin? Charge for it, I don't think if you charge three or four dollars it is unreasonable, but don't neglect to tell the parents about it because if you do you are going to have resting on your heads responsibility for the death from diphtheria of many children in this State.

Dr. Anderson: I believe that covers the subject very nicely, and if the State will furnish it I think it is our duty if the parents are able to pay all right, and if not, give it free. I want to take this opportunity of presenting to this body our new President, Dr. T. H. McCarley of McAlester.

Dr. McCarley: Thank you, Dr. Anderson. You will have occasion to hear from me tomorrow, so I shall not detain you at this time.

Motion made and adopted for adjournment.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.



## HOUSE OF DELEGATES

MAY 16, 1933.

Called to order by the President, Dr. R. M. Anderson, Shawnee.

Roll call by Dr. C. A. Thompson, Secretary.

Dr. Anderson: The first order of business is the election of President-elect for the next term.

Dr. S. D. Neely, Muskogee: I would like to place in nomination the name of a man who was past Dean of the Oklahoma School of Medicine, who was Dean when I was a student there, who has done more for the University than any man in the State. Oklahoma was in "B" class when I was a student in medicine. Today it is recognized by the American Medical Association and it is now one of the best medical schools in the country. This man should have had this honor long ago. He is the master mind of medicine in this State, and he stands head and shoulders above any other man I know of and can think of. I would like to place the name of Dr. LeRoy Long of Oklahoma City, in nomination.

Dr. A. J. Weedn, Duncan: I would like to name, gentlemen, a doctor whose service in this State is of such great length that it would take up too much of your time to tell about it, Dr. D. Long of Duncan.

Dr. Cliff Logan, Hominy: It might be a little presumptuous on my part to try and make an oration. There is no man whose principles and ideals have been higher than Dr. LeRoy Long of Oklahoma City. I would like to second Dr. LeRoy Long's nomination.

Dr. C. B. Taylor, Oklahoma City, moved that nominations be closed.

This was seconded and carried, and it was decided to vote by ballot.

Dr. Cliff Logan, Hominy: It is a rule that one of our Delegates cannot be elected for President or not?

Dr. Thompson: For many years there was a provision that a Delegate could not be elected but it did not apply to Councilors. Councilors were eligible for office, and now the constitution is silent on the matter.

Councillors whose term expire in 1933 were announced by Dr. Thompson as follows: District No. 7, Dr. Wm. M. Gallaher; District No. 8, Dr. F. M. Adams; District No. 9, Dr. L. S. Willour; District No. 10, Dr. J. S. Fulton.

The ballot for President-elect was cast as follows: Dr. LeRoy Long of Oklahoma City, 40 votes; Dr. D. Long of Duncan, 16 votes.

Dr. Anderson: Dr. LeRoy Long of Oklahoma City, is elected President-elect of the Oklahoma State Medical Association. I want to delegate Dr. Shade Neeley and Dr. Cliff Logan a committee of two to bring Dr. Long here. The next order of business is to select a meeting place for 1934.

Dr. Paul Champlin, Enid: I have been instructed by the Garfield County Medical Society to invite the State Medical Association to meet in Enid next year. We have ample facilities and have not had the meeting in a good many years, and we are very desirous of having you meet there next year.

Dr. C. H. Haralson, Tulsa: At the last meeting of the County Medical Society it was voted to ask the State Association to meet in Tulsa next year if you so desire.

Dr. J. E. Walker, Shawnee: I have a telegram from the Secretary of the Chamber of Commerce in Shawnee inviting this Association to meet in Shawnee in 1934, which I place on the desk.

Dr. Anderson: Let us have the ballot.

Dr. Willour: Mr. President, if it is not too late to talk on the subject of the meeting place, I should like to say a few words. Gentlemen, you all know as well as I do the economic condition throughout the State. You know as well as I that doctors don't want to meet much farther away from the center of the State than they have to. Our attendance has been materially cut down in the past few years due to unfavorable circumstances, and I feel that we should consider very carefully where we meet next year. I think we should be dead sure to meet at the place that is most acceptable to the State Society. I fear for the attendance if we go to some place not centrally located. In the city of Enid they are wonderful people to entertain you; two years ago I attended a convention there and we were entertained royally but we felt that we were too far away from the center for the best of our attendance. We tried to pull a convention in McAlester with just about the same attendance. We should consider then the good of our State Society in the way of attendance. I am electioneering for no particular place, but I would like for us to consider this when we vote on a meeting place for next year.

Dr. S. D. Neely: Last year in the House of Delegates Muskogee invited you over there, but Oklahoma City was suggested and we consequently withdrew because we know we are not in the center of the State. Now we could take care of you but we know it wouldn't meet with general approval in other conditions—the men from southwestern Oklahoma would not come to Muskogee, and I feel that Dr. Willour is perfectly right. If we went to the northwestern part of the State, to Enid next year, I scarcely feel I could go. It is hard to get over there. It is 190 miles by road from Muskogee to Enid. I think it would be all right to go to Enid if it wasn't for the location outside the center of the State. I would like also at this time to insist on nominating Muskogee as a meeting place for 1934, but I am not going to do it because I don't think it would be right. I would like to see the meeting place put in the center.

Dr. Champlin: It is only a two hour drive from here to Enid. Anyone can make it in two hours. I don't see why we are so far from the center of the State.

Dr. John F. Kuhn, Oklahoma City: It might be just a little late for this, but I want to say a word in regard to the next meeting place. We want you to feel that Oklahoma City is always wide open with welcoming arms. We do not purposely offer this place in competition with other cities. We want you to feel that there is no thought in our mind that we should insist on your coming, but we will welcome you as royally in the future as we have in the past.

Dr. Anderson: I am sorry you did not make your talk sooner. We would have met here.

The ballot was cast for meeting place of 1934,

with twenty-three votes for Tulsa, thirteen for Enid and seventeen for Shawnee.

Dr. Anderson: Gentlemen, we meet in Tulsa next year for 1934. I am feeling good that Shawnee got as good a vote as it did, but we are not able to take care of you as well as Tulsa is. So next year we meet at Tulsa.

Dr. Thompson: The Oklahoma State Medical Association has for many years been entitled to three delegates to the A. M. A., but our membership has slumped until now we are not entitled to three unless we gain in membership. Dr. McClain Rogers' term expires this year. My suggestion is that we re-nominate him for 1934 contingent upon whether or not we are entitled to three delegates when the time comes next year. We have two delegates, Drs. Cook and Reed, who are in, but Dr. Rogers' term expires. Now it is up to you to select someone for Dr. Rogers' place, if and when one is needed.

Dr. Willour: I would like to place the nomination of Dr. McClain Rogers to succeed himself as delegate to the A. M. A.

Dr. W. A. Cook, Tulsa: It is a very sad thing that our membership has shrunk, but that shrinkage has not been confined to Oklahoma; this shrinkage has extended all over the United States. I think there will be something done towards reapportionment in the meeting of the House of Delegates in Milwaukee next month and if so we can have three delegates.

Dr. Willour: I move that nominations be closed and that the Secretary cast the ballot of the House of Delegates that Dr. McClain Rogers be delegate to the A. M. A.

Dr. Thompson: I declare that Dr. McClain Rogers has been selected for delegate to the A. M. A., for this Association for 1934 and 1935, provided we have enough members to entitle him to attend.

Dr. Fulton: We must have more votes for 1934. As Councilor for District No. 10 I have canvassed the whole district pretty well and I have found that every man paid his dues in 1932 and every man except one paid his dues in 1933. I even offered to pay this fellow's dues but he wouldn't let me. So it seems that District No. 10 except for this one paid their dues this year. The shrinkage is in other parts of the State.

Dr. Thompson: Several of our committees have not yet reported. The Committee on Scientific work has nothing to report except that they recommend the continuation of the plan of selecting of officers as heretofore. We will have the report of the Committee on Public Policy and Legislation. Dr. Fulton is Chairman of that. Then we have the Committee on Necrology, of which Dr. Ellis Lamb is Chairman.

Dr. J. S. Fulton, Atoka: In making this report for the Committee on Public Policy and Legislation, I want to tell you that this Committee has gone through some very strenuous times. We have had some propositions up that looked pretty scary to us. Your Committee has had three meetings, and I don't know how many meetings we have had with the Governor. We have had some cussings and some ugly things said to us and some mighty nice things, and we feel that we have been on some pretty dangerous ground. Almost a word from the Governor would have fixed it so that the doctors of this State could

not have charged over twenty-five cents a mile for their work. I want to read you my report (see report). When we think about that bill limiting a fee of a physician to twenty-five cents a mile we can feel pretty good. That bill passed the House and one word from the Governor and it would have passed the Senate. We were afraid they would pass that bill. One of the Senators, one of the best friends I have ever had, said that a lot of these fellows are dangerous because they want to tell the people back home that they voted for everything that would cut down expense. You know the people in your community would be pleased to see the fee cut to twenty-five cents a mile. The Governor kept his hands off of it. We got it hung up with the Committee, and a few Senators were siding in with us.

Dr. Anderson: Gentlemen, this is one instance where I believe it is a wise thing that we did not get the report in time for it to be published in the Journal. If we had, probably few of us would have read it. Dr. Fulton has read it so that we all understand what it means. Before we leave this I want Dr. Ritzhaupt of Logan county to be heard from on this same subject.

Dr. Louis H. Ritzhaupt, Guthrie: Mr. President, I wish to say to these gentlemen that the most powerful dictatorial person in the State organization is your Governor. He is a man that has got to be coped with. He has a powerful influence in his Executive Boards and you have just seen the result in the Highway Commission and you are going to see it in every district of the State. I am warning you. I have just finished a session in the Senate of Oklahoma, and so I won't ramble too much, I have a few pages I would like to read to you. I would like for each of you to consider this matter. You have got to consider this man as Governor for two years because he is not going to be impeached, and you have got to be considering him as Governor for the next eight years. He has a powerful political machine that will be hard to break. I have had many conferences with him as a Senator and I know what it means to have these things come in. This fellow, Todd, brought in that twenty-five cent a mile law; a man with that feeling towards the medical profession should have never been elected. He is from out in Western Oklahoma and I thought he was so insignificant that I didn't pay any attention to him until I found that he was the author of that bill. I don't believe the Governor is going to pass anything that is detrimental to the doctors but he has the most powerful retaliative reasoning of any man. You can't reason with him and you have got to catch him in the right mood. I was against Murray when he went in but I have established his confidence in me but even that can easily be destroyed. There are in the Senate twenty-two rubber stamp men. He has the House just where he wants it and he can pass any measure in that House. You can't irritate him, gentlemen, you have to handle him with gloves and I hope all doctors will wake up and see that your Representatives and Senators in the future are more favorable to the medical profession.

Dr. Fulton: Dr. Ritzhaupt was a wonderful help to this Committee.

Dr. Anderson: We want to thank Dr. Ritzhaupt for bringing this message to us and I want you to know that the incoming President, Dr. Mc-



Carley, and his Committee on Public Policy and Legislation is going to take care of that this coming year. You have elected Dr. LeRoy Long as President-elect to this body, and I now have the pleasure of presenting him to this body.

Dr. LeRoy Long, Oklahoma City: Mr. President and members of the House of Delegates, I was just getting through a cup of coffee at home when Cliff Logan called me and said he was with a Committee that had charge of me and wanted to bring me here. As I drove down I began thinking about my association with the medical profession of this State and my association with the profession in Indian Territory before it merged with the Oklahoma State Territory, and in my reflections I thought about what it had meant to me. I came to Indian Territory in 1895 to take the practice of my good friend, Dr. Fulton. He went away pretty soon after that and I had his work for a couple of months while he was gone, and then I located at Caddo. Soon after I came to Indian Territory Dr. Fulton pointed out to me that it would be a good thing for me to join the Indian Territory Medical Association. That was very appropriate advice for a young man. I had the pleasure for a great many years to be associated with what I consider the really great men in this State. Dr. Fite of Muskogee, Dr. Fulton of Atoka, Dr. Fortner and Dr. Bagby of Vinita, and a great many others whose names I am unable to recall now but nothing has ever been of more service to me than that beginning of my professional career, beginning with that association that I have tried to keep up in a more or less uniform way since that time. I know now a great many doctors in the State of Oklahoma. Sometimes I know the faces and cannot recall the names, which is a great embarrassment to me, but I know them and appreciate this action on your part. I appreciated it more, I think, because I believe it comes to me on account of my stand in connection with medicine in this State. I am not a radical. I don't wish to be classed as a reformer. I simply wish to do what I can to tell the medical profession of this state that it should be independent and take care of its own affairs. As I have said, I have no wish to be classed as a reformer. It is only necessary for us to regard the principles of our profession in the proper way to do anything we want to do. I was impressed by one statement that Dr. Ritzhaupt made, that this great body of retrograde physicians can do anything it wants to do. If we can agree on the fundamental principles and keep in mind all the time these principles, there is no question of what the medical profession can do, and we can take care of our affairs and solve the problems of our work. It has been before us a number of times before; there was a Governor of Missouri, I think it was Stevens, but anyway the medical profession finally became aroused and he was destroyed. There has never been a single instance in the history of the world where the medical profession could not do anything it wanted to do because it couldn't do anything bad when it sticks to its principles. I do believe that we ought to be strong enough and conscientious enough and willing enough to take over our own affairs and treat everybody like they ought to be treated. Just one other thought. My sons tell me and my wife tells me that I have a forbidding personality. I think people regard me sometimes as a cold man. I know they do because I have that kind of expression about me. Dr. C. B.

Taylor told me the other day—he didn't exactly tell me but he said it about me, "I would hate to play poker with Dr. Long because I could never understand his face." But really I am an emotional man as Dr. Fulton knows, and I feel kindly towards people. Nothing gives me more pleasure than association with some of my old students. Cliff Logan used to be a student to me; Cliff understands me and I understand him. Shade Neeley over there is the same way. We understand each other and when you understand each other there is no difficulty in getting along. All any of us wants is to have the other fellow treat us like we should be treated and give us the opportunity to treat the other fellow as he should be treated. I have talked entirely too long, but all I want to say finally is that I want to work with the medical profession as best I can. I consider it an honor to be preceded by Dr. Anderson and Dr. McCarley and I shall try to keep up the standards that they have erected.

Councilors nominated and elected by the Delegates of each District were as follows: District No. 7, Sam McKeel, Ada; District No. 8, Dr. F. M. Adams, Vinita; District No. 9, Dr. L. S. Willour, McAlester; District No. 10, Dr. J. S. Fulton, Atoka.

Dr. Anderson: Let us vote on these as a whole. Is it the will of this organization that we accept the selection of these different Districts?

Vote carried.

The report of the Committee on Necrology was given by Dr. Ellis Lamb, Chairman:

"Whereas it has pleased Almighty God to remove from our membership the following members of our association since our last meeting:

Dr. B. W. Baker, Cordell.  
Dr. Benjamin D. Castleberry, Apache.  
Dr. D. L. Connell, Picher.  
Dr. E. R. Deans, Miami.  
Dr. G. T. Drennan, Pond Creek.  
Dr. Gayfree Ellison, Norman.  
Dr. J. M. Hancock, Chandler.  
Dr. R. H. Harper, Afton.  
Dr. G. W. Hinchey, Oklahoma City.  
Dr. C. A. Howell, Oklahoma City.  
Dr. O. R. Jeter, Mangum.  
Dr. J. A. Jones, Tonkawa.  
Dr. E. D. Mabry, Oklahoma City.  
Dr. J. E. Mahoney, Enid.  
Dr. H. P. Markham, Pauls Valley.  
Dr. J. Z. Mraz, Oklahoma City.  
Dr. J. F. Musser, Calvin.  
Dr. C. D. F. O'Hern, Tulsa.  
Dr. J. B. Rolater, Cave Springs, Ga.  
Dr. R. L. Russell, Marlow.  
Dr. Thomas C. Saunders, Shawnee.  
Dr. John H. Scott, Shawnee.  
Dr. Wm. H. Smedley, Capron.  
Dr. A. H. Stewart, Lawton.  
Dr. Dow Taylor, Supply.  
Dr. G. W. Taylor, El Reno.  
Dr. F. L. Watson, McAlester.  
Dr. D. W. White, Tulsa.  
Dr. George F. Woodring, Bartlesville.  
Dr. A. W. Harris, Muskogee.  
Dr. C. J. Greene, Durant

And Whereas, they will be greatly missed by the members of this association in our annual meetings.

And Whereas, they will be missed in

their respective communities in rendering the unselfish service for which every true follower of the Art is noted as in all social and community activities.

And Whereas, the greatest loss will be to their individual families.

Be It Resolved, that we humbly bow to the dictates of the Great Physician who does all things well, in the calling of these brothers from their respective fields of earthly activities and that we should try to emulate their examples in the doing of good, relief of pain, and saving of life to which they consecrated their life's work and best efforts while living among us.

Be It Further Resolved, that a copy of these resolutions be mailed to each of their respective families and also spread upon the minutes of this association and published in the Oklahoma State Medical Journal."

ELLIS LAMB, Chairman,  
O. S. SOMERVILLE,  
J. A. HATCHETT.

Dr. Fulton: Referring again to the decrease in our membership, I want to say that this group of splendid men who have been taken from our midst explains largely why our membership has decreased.

Dr. S. D. Neeley, Muskogee, presented actions of Resolutions Committee:

#### RESOLUTION

To the President and Board of Regents of Oklahoma University:

The House of Delegates of the Oklahoma State Medical Association in regular session assembled knowing the importance of the continuation of Medical Extension teaching and feeling that this class of instruction best reaches the general practitioner and through them benefits the general public, and that more than two-thirds of the expense is met by the Doctors themselves and this Association, respectfully petition that sufficient appropriation be allowed to continue this work.

It was moved by Dr. Neeley, seconded by Dr. L. S. Willour, that this resolution be adopted. Motion carried.

#### RESOLUTION

Proposed Amendment to By-Laws of Oklahoma State Medical Association. Page 4, Chapter 1, Membership.

It is proposed that the following shall be added:

Section 4: Any Physician a member of this Association, who by reason of ill health, or age, shall retire from the active practice of medicine may be placed upon a roll known as the Honorary Membership roll. Such Physicians may make application in person or by their agent, but all such shall have the approval of the House of Delegates before their names are so placed.

This resolution was moved for adoption by Dr. Neeley, seconded by Dr. Fulton, motion carried.

#### RESOLUTION

Motion for Basic Science Act.

Mr. President, by mandate from the Muskogee County Medical Society, I make the following motion:

That the House of Delegates of the Oklahoma State Medical Association goes on record as favoring the enactment by the Oklahoma Legislature at the earliest possible time a Basic Science Act, which will provide that an examination in the Basic Sciences of Pathology, Bacteriology, Anatomy, Chemistry, Hygiene, and Physiology must be taken by every candidate for a license to practice any form of the Healing Art in the State of Oklahoma. That it be specifically written that the examiners in these basic sciences be instructors from the University of Oklahoma or Oklahoma Agricultural and Mechanical College, and not in the active practice of any of the Healing Arts. That a copy of resolution if passed be sent to each component County Medical Society with instructions of the merits of this act. That the Committee in charge of this act contact the legal department of the American Medical Association and solicit its aid in framing the articles of this act. That the different State Associations shall be contacted who have this act passed and write in the Oklahoma Act such pertinent suggestions thought applicable. That the Committee on Legislation be specifically instructed by this House of Delegates to exert their whole hearted efforts in securing a workable act, an act which will be unbiased, an act which will serve to elevate the standards in the practice of medicine and other forms of the healing art.

Resolution moved adopted by Dr. Neeley.

Dr. Louis H. Ritzhaupt, Guthrie: I would like to call your attention to this fact. That may be the sentiment of the Association, but you have not got the support to pass that. You are going to have the osteopaths out working; you had better slip them something and you had better get ready for this. I don't believe the medical profession is ready for that resolution today. If you do adopt it you are going to be defeated. I know you cannot pass that bill in the Senate with the legislative organization they have with Murray control in the next legislation.

Dr. Thompson: The intention is to present this to the organization of every County in the State first. That will be the first step, then the bill will be drawn and presented with what power can be used behind it.

Dr. Ritzhaupt: This going out is public press information and you will get immediate opposition to it.

Dr. J. S. Fulton, Atoka: Dr. Ritzhaupt is absolutely right about this proposition. You haven't got the support you need. If we pass that resolution this morning it won't be three days until every irregular in this State will begin building fences to fight this thing. I move that this resolution be tabled until we are better prepared. Let us not adopt it as it is. It is dan-



gerous. You are starting something that the busy doctor is not going to pay any attention to much, and every irregular in this State is going to get busy and start building fences against it. Dr. Ritzhaupt is just as much in favor of this as you or I. But you are starting something that you are not going to be able to finish. If we pass this we are giving the other side warning.

Dr. Thompson: I offer a substitute motion that the President appoint a committee to study first the type of law we want, a committee to work through my office to try and organize in each County quietly an organization that will see the legislators from that County.

Dr. A. E. Aisenstadt, Picher: I don't believe that our Secretary's substitute motion is in order, but I will move that this resolution be referred to the Legislative Committee without further discussion.

Dr. Thompson: I withdraw my proposed motion and second your.

Motion carried.

### RESOLUTION

Registration of All Licensed Practitioners of the Healing Art.

Mr. President, I make the following motion, that the House of Delegates goes on record as favoring legislation by the next Legislature or as soon as is feasible the requirement that the Secretary of the regular Board and the Boards of all the different sects who have the regulation of the Healing Art in the State of Oklahoma register each and every one licensed and date of license with the Secretary of the State of Oklahoma. This is to be retroactive, that every licensed practitioner of the Healing Art shall be registered with the Secretary of State by the board licensing him or her, and that if not registered by fixed date person is not entitled to practice the Healing Art in Oklahoma, that this must be certified by Secretary of State and these names kept by him for reference at all times.

Resolution moved adopted by Dr. Neeley, and seconded.

Dr. S. D. Neeley: This resolution means just this. Arkansas has this basic science law and the cults would not pay any attention to this basic science law, which was passed in 1929 in the Arkansas State Legislature. When a member of the cult comes in and wants a license they antedate that license back behind when this law was passed. Automatically this basic science law does not apply.

Motion carried.

### RESOLUTION

Be it resolved that it is the sense of the House of Delegates of the Oklahoma State Medical Association that employees be allowed under the workmen's compensation act to select their own physician or surgeon providing it is the selection of a regularly practicing licensed physician or surgeon.

Dr. Neely: The Resolutions Committee could not come to any conclusion on this resolution.

Dr. H. C. Weber, Bartlesville: I think the man who pays the bill has a right to select the physician. I think that is being done in every State in the Union, and I don't think that resolution is good.

Dr. J. S. Fulton, Atoka: That is under Senate Bill No. 162. That was defeated anyway. We took that up and we tried about as hard to defeat that as anything. When a man gets injured he is no more competent to select his doctor than somebody that don't know his doctor at all. These insurance companies are interested in getting these employees well at the first moment they can and they want the most able men to treat them. Now if a man gets hurt and they set his leg and he gets a bad result, who does it hurt? The fellow who is injured as well as the insurance company. The insurance companies want the very best medical and surgical attention. They have got to pay the bill. If the recovery is long drawn out and so on the insurance company has the bill to pay, and they should have the right to select the physician for injured employees.

Dr. Jas. L. Shuler, Durant: The man that has been injured is on the other side of this question, and he has a right. No one can deny that a man has a right as to who he is to have as his family physician and it doesn't make any difference whether he gets injured or whether he is sick. He ought to be allowed that preference. Some doctor comes up here and makes arrangements with these insurance companies and gets all the work. He makes some proposition to get the work and the man that is injured has no right to select his family physician and he is dissatisfied and the family is dissatisfied and it is an unfair situation. In families that have had their physician for years but when it comes to injuries of any kind he can't treat them on account of this, and he is just as competent and often more so than those who have been employed. It is a great injustice. You don't want to take just one side and run away with it. If a man is competent to select his physician when he is well, when he gets hurt he ought to be considered in the matter and I think it would be unfair to do away with that fact.

Dr. Thompson: I entirely disagree with the man who stated that the patient is competent to select his family physician, but the employer has to pay the bill.

Dr. L. C. Kuyrkendall, McAlester: I make a motion that this resolution be tabled.

Dr. Thompson: I second the motion.

Motion carried.

Dr. Fulton: Mr. Chairman, in reference to the Legislative Committee, there is going to be a great load of work put on that Committee and I think some changes should be made. The greatest men we have in our Association ought to be on that Committee. I would like for someone to be put on instead of me.

Dr. Thompson: That is up to the incoming President.

Motion made and seconded for adjournment, carried.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

### FIFTH ANNUAL CONVENTION OF WOMAN'S AUXILIARY

The fifth annual convention of the woman's auxiliary to the Oklahoma State Medical Association opened with an executive board meeting in the Skirvin Hotel, Monday, May 15, 1933. Some important items were reported from committee chairmen and particularly an acceptance of a revised constitution, which had been ably arranged by Mrs. J. Woods and Mrs. Thos. Davis of Tulsa. A finance committee was also selected to arrange a budget, this group made a report at the general meeting on Tuesday.

Monday noon, Mrs. A. R. Lewis, Oklahoma City, and Mrs. Earl McBride, State President, entertained the State Executive Board at a luncheon at the University Club. Monday afternoon from 3:00 to 5:00 a very enjoyable musical tea was given at the home of Mrs. Edw. P. Allen in honor of the visiting ladies and several honored guests. Two out-of-town guests were Mrs. James F. Percy, the National Auxiliary President from Los Angeles, and Mrs. Collard of Wichita Falls, Texas. Mrs. Percy gave an excellent address at the auxiliary luncheon held on Tuesday noon at the Oklahoma City Golf and County Club. Musical numbers and bridge also followed this luncheon.

Mrs. Collard gave an excellent organ recital in the Pilgrim Congregation Church in honor of the auxiliary guests. Mrs. Basil A. Hayes, Oklahoma City, assisted with some fine vocal numbers. At the general meeting of the auxiliary held on Tuesday morning at 10:00 o'clock in the Crystal Room of the Skirvin, there were fifty-two representatives of different county auxiliaries in attendance and seven associate members and several guests present. The committee reports and County Auxiliary reports were very interesting. Tulsa County, with fifty-six paid-up members, gave a fine report on its activities in assisting the Public Health Association, Hospitals and the Salvation Army Maternity Home. Their philanthropic work for 1932-33 consisted of making nineteen hospital gowns, twenty-four crib sheets for hospitals, thirty-eight infant's gowns, twenty-four crib sheets and other accessories for maternity homes and also four dozen diapers and twelve maternity gowns for the Tulsa Public Health Association. Several health programs were sponsored throughout the year and three Hygeia subscriptions were entered and sent to rural schools.

Pottawatomie Auxiliary reported a membership of twenty and the project work of making of layettes. Seventy-six families have been assisted by the organization. Next year the group plans to handle all lavette making for the Red Cross in the entire country. This work will be done at the monthly meetings.

Oklahoma County, with a membership of ninety-six active and nine honorary, had a yearly report of several social affairs, and varied social service work. Thanksgiving and Christmas donations of food and toys were made and Hygeia subscriptions were sent to three orphanages. A group of members have also assisted in Red Cross, calling on needy families. At the regular monthly luncheon meetings two hundred thirty-six garments were made for the Crippled Children's Hospital and thirty scrap books.

Norman chapter, recently organized, made its

first report at the convention an especially promising one for the next year.

The finances for the State Organizations are as follows:

Total Receipts for year .....	\$165.31
Total Disbursements .....	104.20

Balance on hand .....	\$ 61.11
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Following the report of the nominating committee, the following officers for the coming year were elected: President-Elect—Mrs. J. E. Hughes, Shawnee; Vice-President, Mrs. Ben Cooley, Norman; Recording Secretary, Mrs. I. N. Tucker, Tulsa; Treasurer, Mrs. Marvin Henley, Tulsa.

Mrs. McBride, 1932-33 president, retired in favor of the new president, Mrs. A. W. Roth, Tulsa. Mrs. Dale Collins of Oklahoma City, was convention chairman and in charge of all arrangements and plans for the social and business affairs of the convention.

### ANNUAL REPORT

of the

Secretary-Treasurer-Editor  
May 1, 1932 to April 30, 1933

To Members of the Oklahoma State Medical Association:

In conformity with the Constitution and By-Laws, I hereby submit the report of various transactions during the past year.

Detailed statements of all activities, financial transactions, duplicate deposit certificates and other business matters have been submitted to the Council for their audit.

**Membership:** On April 30, 1932, we had 1502, on this date we have 1447. Some loss in membership would naturally be expected due to the depression.

**Deaths of Physicians:** These will appear in the report of the Committee on Necrology, published in this issue.

**Medical Defense:** The following cases have either been settled, dropped or disposed of:

Settled:

Cleveland County, No. 10335.
Ottawa County, No.....
Kiowa County, No.....
Carter County, No. 18723.

Pending:

Tulsa County, No. 56051.
Garfield County, No.....
Garvin County, No.....
Choctaw County, No.....
Payne County, No.....
Craig County, No.....

In addition to these there are now pending the following cases, the progress and status of which is unknown, as they are pending or dormant in the courts:

Oklahoma County, No.....
Ottawa County, No.....
Ottawa County, No.....
Tulsa County, No.....
Pottawatomie County, No.....
Kiowa County, No.....
Kiowa County, No.....
Okmulgee County, No.....



**Journal and Advertising:** During the last half of 1932, we lost sharply in advertising, but lately there has been some renewal and we are assured by our Chicago representative that this will probably continue. In this connection permit me to call your attention to the absolute necessity and fairness in the suggestion that our members deal, so far as it is possible, with those who spend their money with us as advertisers. There can be no good reason for going outside of the state or adjacent states to purchase supplies, instruments, etc., if they may be purchased of the same quality and same price at home. The total receipts from advertising for 1932-1933 was \$5,364.64. For the year before we received \$6,022.85.

We have printed a larger Journal by 110 pages than the year before, the approximate cost of this being about \$550.00. In addition to this the Council has been much more active than ever heretofore, all of which costs some money.

We have spent for two post graduate courses, \$700.00, for expense of prearranged meetings an indefinite amount, not determinable at this time, as the bills are not all in.

The following is the financial statement of our transactions and this is accompanied by a statement from the officers of the Commercial National Bank, in which your funds are deposited.

#### FINANCIAL STATEMENT

The Oklahoma State Medical Association  
Dr. C. A. Thompson, Secretary-Treasurer-Editor  
May 1, 1933

##### Receipts

Advertising, Subscriptions & Exhibits	\$ 5,364.64
County Secretaries	5,859.50
Interest on Liberty Bonds	425.00

Total Receipts ..... \$11,649.14

Cash on hand in bank, May 1, 1932..... 5,459.76

Total ..... \$17,108.90

##### Expenditures

Printing Journal	\$ 6,423.74
Office Supplies, expense, etc.	182.25
Office Rent	225.50
Telephone, Telegraph and Press	
Clippings	110.17
Postage	285.55
Treasurer's Bond and Audit of books..	150.00
Attorney Fees	20.00
Extension Work, University of Okla.....	770.80
Council and Delegates Expense	722.12
Expense, Tulsa Meeting	416.35
Transfer to Medical Defense fund	400.00
U. S. Tax on Checks	3.06
Extra Clerical Work	20.50
Oltha Shelton, Salary Account	1,545.00
Dr. C. A. Thompson, Salary to April 1, 1933	2,400.00

Total Expenditures ..... \$13,675.04

April 30, 1933, Cash on hand in bank	\$3,438.86	
Less checks No. 3517	\$4.00	
No. 3574	1.00	
Outstanding	5.00	3,438.86
Total		\$17,108.90

May 1, 1933, Cash on hand in The Commercial National Bank, Muskogee, Oklahoma	3,433.86
U. S. 4th 1/4 Liberty bonds in Safe deposit box of Dr. C. A. Thompson in Commercial National Bank, Muskogee, Oklahoma	7,000.00
Total Cash Assets	\$10,433.86

#### THE MEDICAL DEFENSE FUND

The Oklahoma State Medical Association  
Dr. C. A. Thompson, Secretary-Treasurer-Editor  
May 1, 1933

##### Receipts

May 1, 1932, Balance Cash on hand in bank	\$ 42.73
May 11, 1932, Transfer from Oklahoma State Medical Association	100.00
June 25, 1932, Transfer from Oklahoma State Medical Association	100.00
August 3, 1932, Transfer from Oklahoma State Medical Association	100.00
September 22, 1932, Transfer from Oklahoma State Medical Ass'n.	100.00
Total	\$ 442.73

##### Expenditures

May 20, 1932, Earl A. Brown, Attorney Butts vs. Johnson, Carter County	100.00
June 25, 1932, H. C. Lloyd, Attorney Carrie Hathorn vs. J. M. Bonham, et al.	100.00
August 2, 1932, Frank Nesbitt, Attorney, Spencer vs. Connell	100.00
September 21, 1932, John Luttrell, Attorney, Blackwell vs. Thacker	100.00
April 29, 1933, U. S. Tax on bank checks	.06
Total	\$ 400.06

May 1, 1933, Balance Cash on hand in bank	42.67
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Total ..... \$ 442.73

May 1, 1933, Balance Cash on hand in The Commercial National Bank, Muskogee, Oklahoma	\$ 42.67
U. S. 4th 1/4 Liberty Bonds in Safe deposit box of Dr. C. A. Thompson in The Commercial National Bank, Muskogee, Oklahoma	3,000.00

Total Cash Assets of Medical Defense Fund ..... \$ 3,042.67

May 1, 1933, Total Cash Assets, Oklahoma State Medical Association	\$10,433.86
Medical Defense Fund	3,042.67

Grand Total Cash Assets ..... \$13,476.53

Respectfully submitted,

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

(Signed) H. A. LEWIS, Auditor.

## COMMERCIAL NATIONAL BANK

Muskogee, Okla., May 3, 1933.

Dr. C. A. Thompson, Secretary-Treasurer,  
Oklahoma State Medical Association,  
City.

Dear Sir:

This is to certify that according to our records, the following accounts had a credit balance, subject to check, at the close of business April 29, 1932, as follows:

Oklahoma State Medical Association.....	\$ 3,438.86
Medical Defense Fund .....	42.67

Yours very truly,

A. H. DAVIDSON,

Cashier.

Muskogee, Okla., May 3, 1933.

Oklahoma State Medical Association,  
City.

Gentlemen:

This is to certify that I have examined the bonds held by Dr. C. A. Thompson, Secretary and Treasurer of the Oklahoma State Medical Association, in his safety deposit box at the Commercial National Bank, Muskogee, and find ten \$1,000.00 Fourth 4¼ % Liberty Loan Bonds, with October 15, 1933, and subsequent coupons attached, total \$10,000, as follows:

No. HO2629568	No. CO2629573
No. JO2629569	No. DO2629574
No. KO2629570	No. EO2629575
No. AO2629571	No. FO2629576
No. BO2629572	No. GO2629577

Yours very truly,

H. A. LEWIS,

Auditor.

In closing permit me to again urge you to insist upon the man who proposes to sell you goods advertise in our Journal and on your part make it a point, as far as possible, to patronize those who give us their financial aid.

C. A. THOMPSON,  
Secretary-Treasurer-Editor.

## REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

This committee had its first meeting in January, in Oklahoma City. At that time we called on the governor to talk over some matters regarding legislation. The governor was very emphatic in his assertion that, we could not get any legislation through at this meeting of the legislature without his backing, and this was impossible as his slate was full. He further affirmed that, the medical profession could not get any good laws regulating the practice of medicine until a basic science bill was passed. When told that we had two petitions with us, one from McAlester, and one from Muskogee, asking this committee to present such a bill, his reply was to the effect that, the profession, nor the public, was ready for such a bill, nor educated for such a law; that our county societies over the state should take this matter up, educate the people along such lines, then present such bill at some future meeting of the legislature and get it passed, and by so doing we "would eliminate a lot of damn fools from the profession." He also

assured us that, we could not expect any help from him at this time.

Acting upon the above suggestion, this committee decided it was hardly worthwhile to try to get any legislation for the betterment of the profession and the public through this legislature and turned its full attention to some of the many bills which had been introduced and would be introduced from time to time during the one hundred nine days' session. The bills, which will eventually be set out in full in this report, we thought radical and obnoxious, and injurious to the profession, as well as the public.

We had our second meeting in February. This was, without doubt, our most effective meeting. At this time we were able to meet with the senate committee on Public Health. After a discussion of the objectionable bills, we found the committee fully with us and had some assurance that such bills were not likely to pass the senate. At this same time we also talked with many members of the house and was assured by a number of them that, the bills mentioned would not become a law. However, both the members of the house and senate suggested that, we present our views on these different bills to members of both houses by letter, which we did—not to all members, but to many of them—the names of such members being furnished to us by friends in both houses.

At our last meeting in Oklahoma City, which occurred in April, all three members of this committee were present. At this time we again went before the governor in an effort to prevent his cutting out about three thousand dollars, which was necessary to pay Mr. Kibler's salary and expenses in putting on the extension courses from the university. While the first part of the meeting was a little stormy, on the whole we had a very pleasant and profitable visit with the Governor, but he would make us no promise other than, he would give the matter due consideration and do whatever he thought was right.

The legislature has adjourned now and none of the objectionable bills passed, but in view of the probability of a called session during the fall months, at which session no legislation can be taken up except such matters as are recommended by the governor, and in view of the governors' expressed opinion concerning the urgent need of a basic science law, we feel that, the new committee on legislation should be requested by the officers and the house of delegates to draft a suitable basic science bill, this bill to be presented to the governor for his endorsement, and if possible, have it introduced in the legislature for its consideration.

Following are the bills referred to in this report:

SENATE BILL 59: Granting license to Mrs. E. E. Bundy of Boise City to practice medicine and prescribe opiates, without examination, as a reward for her wonderful discovery of a cure for cancer.

HOUSE BILL 199: Fixing fees of a physician at not over 25 cents a mile.

SENATE BILL 162: To amend workman's compensation act, proposing to permit an injured employee to select his own physician or surgeon, for whose services the employer shall be liable.

HOUSE BILL 43: Which regulates the



sale of certain drugs, such as veronal, barbital, luminol, chloral hydrate, bromida, cannabis, and other drugs.

HOUSE BILL 325: Authorizing osteopaths to practice in state owned hospitals.

HOUSE BILL 404: An act transferring the duties of the care, upkeep, maintenance, and custody of the grounds and buildings of the University of Oklahoma and of the several departments from the board of regents to the state board of affairs.

As we have stated before in this report, we protested in every way possible, by letters, by phone, and by calling in person. We also sent out letters to many of the doctors over the state, asking them to protest to their senators and representatives against the passage of these bills. The chairman of this committee made a trip to Ada, and met with the Southern Oklahoma Medical Association in an effort to get their cooperation for the defeat of these bills. He met with hearty cooperation and it was at their suggestion that the doctors over the state be appealed to to make an individual effort to defeat the bills.

No bills with any objectionable features were passed, so your committee feels that, in a measure they accomplished some good.

Respectfully submitted,

J. S. FULTON,  
HORACE REED,  
FOWLER BORDER.

#### REPORT OF COMMITTEE ON POST GRADUATE EXTENSION WORK

Owing to the delay in obtaining data for this committee report, it was impossible for me to have it prepared for publication in the last issue of the Journal. You will see, however, from this report that your committee on Educational Extension Work has accomplished considerable, and I want to say before proceeding with the report that this has been very largely due to the activities of Mr. L. W. Kibler, who has had charge of all the administrative duties associated with putting on this work.

There have been financed by the State Medical Society four courses this year. One in Obstetrics and Gynecology, one in Surgical Diagnosis, one a course given in Southeastern Oklahoma, and the Cancer Teaching Clinics. Twenty-six centers in the state have been visited in putting on these courses. Twenty-nine out-of-state speakers have been brought in, and eighteen members of the Oklahoma State Medical Society have participated in these faculties. Two courses have been financed by the doctors participating, one in Degenerative Diseases, in which nine outside physicians have been brought in to participate as teachers, and one in Traumatic Surgery in which seven outside physicians participated in the faculty. In the course in Degenerative Diseases, ten members of the Oklahoma State Medical Society participated as instructors.

In the two courses in which the State Medical Society invested \$700.00, there was an attendance of 698, costing the State Medical Society, as you see, about \$1.00 apiece for these courses. An attendance of 1137 is recorded as attending

the Cancer Teaching Clinics, and there was an attendance of fifty-seven physicians at the Southeastern Oklahoma circuit. This, you will see, gives a grand total of about 1900 who have attended the courses with a cost to the State Medical Society of \$700.00. The Oklahoma State Medical Society and the doctors of the state have spent this year \$5,065.95 in medical extension work. The state has appropriated \$1,431.00 toward this work and the balance has been borne by the Extension Department.

Your committee has at all times consulted the Extension Department as to the selection of the various faculties to carry on this work, and has done much in obtaining the service of physicians throughout the country to participate as instructors.

Now, as to the use of our motion picture films in post-graduate teaching, I first want to say that many more centers have availed themselves of these pictures during the past year. Last year I was quite discouraged, feeling that perhaps we had made a foolish investment, as only about a dozen centers used the films, but this year we find that there have been seventy-seven showings of the films throughout the state. In all instances except two these have been without expense to the State Medical Society.

In March, 1933, a good-will tour was sponsored by the State Society in cooperation with the Extension Division of the University of Oklahoma, at which time these films were shown at two points in the Northwestern portion of the state, these two centers being Woodward and Guymon. Fifty-two doctors from the Oklahoma panhandle, Texas and Kansas attended the program at Guymon. Thirty-nine doctors from Kansas, Texas and Oklahoma, were in attendance at the Woodward meeting. Many of these doctors drove 250 miles to attend this meeting and I have had fifteen or twenty letters and cards from doctors attending, telling of their appreciation of the service rendered by the State Society in bringing these films to their part of the state. This tour cost the State Society approximately \$67.00, and we owe to Mr. T. M. Beaird our thanks for putting on this program and thoroughly advertising it. He was accompanied on this trip by Councilor O. E. Templin of Alva, who did much good missionary work during the tour.

These charts are before you for your inspection and consideration, and will be arranged in a conspicuous place so that the members of the State Medical Society may be able to study the scope of the work being done in the way of post-graduate education. This same committee has cooperated with a committee from the faculty of the University of Oklahoma and a representative of the Extension Department in preparing a bulletin which will give the names and subjects of those who will be prepared to go to County Medical Societies and assist in putting on programs. This committee feels that the assistance of outside talent may help to stimulate interest in County Medical Society work, and we hope that the bulletin will be used by your County Medical Societies and that you may feel free to call upon the ones whose names appear to present a program at any time.

L. S. WILLOUR, M.D., Chairman,  
H. H. TURNER, M.D.,  
R. N. HOLCOMBE, M.D.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

**Spontaneous Rupture of the Sigmoid Portion of The Lateral Sinus** by James A. Flynn, Washington, D. C. *The Laryngoscope*, Vol. XLIII, No. 1, January, 1933, P. 65.

The author reports a case of a patient, age nine, with two previous operations, mastoid, having an acute recurrent mastoiditis. The patient was operated and three days after operation had a sudden rupture of the sinus, close to the knee. The rupture was large and it was found that bleeding occurred from both ends and no thrombus was present. Iodoform gauze rolls were inserted into the vessel to stop the hemorrhage. The patient recovered.

Cases reported of spontaneous rupture of the sigmoid sinus are rare. The author states that he has been able to find but two in the literature of recent years. Williams, (Horace J., *Spontaneous Rupture of the Lateral Sinus*, *Arc. Otolaryngol.* Vol. V, P. 552, 1927), reports a spontaneous rupture of the lateral sinus following mastoidectomy in a child of five years. Seven days following operation, rupture with profuse hemorrhage took place. It was controlled by packing. Williams states that the sinus was not thrombosed.

Hill, (Frederick Thayer; *Spontaneous Hemorrhage from the Lateral Sinus*, *Annals Otol. Rhinol. and Laryngol.* Vol. XXXVIII, 1919), reports a case of spontaneous hemorrhage four days after a simple mastoid operation. The patient developed septicemia with metastatic manifestations. Jugular ligation and repeated blood transfusions produced a complete recovery.

**Pulmonary Complications of Tonsillectomy with a Report of Three Cases** by James A. Babbitt, Philadelphia. *Annals of Otology, Rhinology, and Laryngology*, Vol. LXLII, No. 1, P. 47, March, 1933.

Hemorrhage, anaesthetic shock and pulmonary involvement are the three grave complications which may follow the operation for the removal of tonsils and adenoids. Hemorrhage is usually uppermost in the operator's mind, for no operation, even electro-coagulation, can be termed entirely bloodless. Anaesthetic shock has led to extensive status lymphaticus and thymus studies by the British Medical Society and in various parts of our own country.

Questionnaires sent to 1,020 laryngologists in the United States and Canada, with analysis of 200 positive cases, show an incidence of one in each 2,500 to 3,000 cases. Published by Moore in 1922. This small ratio of pulmonary complications is usually accepted by most operators with a tranquil mind.

The author, a man of thirty years of active service in tonsil operations in various hospitals, with scarcely a case during this time of definite pulmonary sequence, reports two lung abscesses and one pneumonia in the past two and a half months. Operations were done in each case after routine reference with customary preliminary safeguards, under ether anaesthesia, in the prone position and with the use of a suction tube. One boy, age three. Two girls, age three and five years.

**Diseases of the Sinuses, Diagnosis and Treatment by Displacement.** John R. Frazee, Boston. *Archives of Otolaryngology*, Vol. XVII, No. IV, April, 1933, P. 54.

The author reports a study of ninety-three patients at the Massachusetts Eye and Ear Infirmary, using the displacement method of Proetz.

According to Proetz, sinuses admitting no fluid should be treated surgically, whereas those showing delayed drainage are suitable for medication. But when these cases were followed this rule did not seem to hold, except for sinuses previously known to contain pus and therefore treated surgically. In fact in no instance has this method of diagnosis added any important finding not previously shown in routine roentgen examination of the sinuses.

The application of the displacement method to treatment appears more encouraging. Sixty-three per cent of sixty-eight patients were improved; that is, their headaches and nasal discharge diminished, and they could breathe more easily and felt better generally. Seven per cent complained of increase of symptoms, usually headache. In twenty per cent the records were incomplete.

Conclusion: The displacement method has usually confirmed but has never added to the results of routine roentgen examination of the sinuses in these cases. Displacement is an adjunct more effective than sprays and nasal packs, but perhaps less effective than it is sometimes claimed to be.

## INTERNAL MEDICINE

Edited by  
E. Rankin Denny, M.D.  
809 Medical Arts Building, Tulsa

**Studies in the Experimental Production of Simple Goiter**, by Bruce Webster. *Endocrinology*, 1932, 16, 617.

The author summarizes the sequence of events that have led up to the knowledge that there are certain food substances which, given to the experimental animal, are capable of producing goiter. In some experimental studies of syphilis at the John Hopkins Medical School it was observed that some rabbits developed goiter when they



ingested a diet containing cabbage, hay and oats. Practically all the rabbits who were on this diet for over forty days developed increased growth of the thyroid glands. By a process of elimination they established the fact that cabbage was a responsible factor for the production of goiter. It was found that the addition of 5.7 mg. of iodine to the diet which produces goiter protected the rabbits for over a year. It was noted that goiters were more easily produced in winter than in summer. It was believed that the iodine deficiency of the cabbage might have something to do with the production of goiter but the goitrogenic agent was found to be much more powerful than the iodine deficiency. Some botanically related vegetables were likewise found to be goitrogenic. Methods of treating cabbage to increase or decrease its goiter producing power were studied. These studies indicated a method whereby it was possible to produce goiter experimentally. The author felt that the goitrogenic substance is probably a cyanid which produces a depression of tissue oxidation. Compensation is brought about by the overproduction of the activator of overproduction, thyroxin, which in turn brings about a relative iodine insufficiency with subsequent hyperplasia of the thyroid. It was suggested by the author that an investigation should be directed towards discovering the inherent disturbance in the animal organism which is capable of producing a relative iodine insufficiency.

**The Role of the Liver in the Tolerance of the Dog to Quinidin**, by Samuel Bellet, M.D., I. S. Ravdin, M.D., T. M. McMillan, M.D., and J. L. Morrison, M.D., Philadelphia, Pa. *The American Journal of the Medical Sciences* Vol. CLXXXV, No. 5, May, 1933.

From the author's experimental work the following conclusions were drawn: The liver is an important agent in protecting the heart and vital centers against the toxic action of quinidin, though it probably does not act by destroying the alkaloid. The production is apparently the result of the action of the hepatic capillaries in readily removing quinidin from the blood and holding the drug in a loose combination, thus preventing the drug when taken by mouth from reaching the heart and vital centers in high concentration. This action of the liver capillaries is not specific but is one possessed by other capillaries as well. The great importance of the liver lies in the fact that it constitutes an enormous capillary bed, and in the case of drugs taken by mouth this organ intervenes between the intestines and the heart in the absorptive pathway. This data indicates that little if any quinidin is destroyed by this organ.

Effective blood concentrations of quinidin in man are apparently small, inasmuch as amounts of as little as 12 grains per day by mouth may produce definite cardiac effects.

If clinical experience should warrant an extension of these conclusions based mainly upon animal experiments to humans, then a diminution of the protective function of the liver, the result of disease, might readily result in a high or rapidly increasing concentration of quinidin in the blood. This would lead to the development of toxic effects upon the heart and vital centers after relatively small doses of the drug.

**Observations on Lung Ventilation in Bronchial Asthma**, by W. H. Lewis. *Ztschr. f. d. ges. exper. Med.* 82:71, 1932.

Observations were made during and after dyspneic attacks and include findings on reserve air, complementary air, vital capacity, respiration and expiration time, ventilation equivalent for oxygen and carbon dioxide, and in a few instances residual air.

Eighteen asthmatic patients (ten men and eight women) were observed in attacks of dyspnea. Ages ranged from twenty-three to seventy years, the duration of asthmatic symptoms from 1 1/4 to 44 years. Most of them had received previous therapy of various kinds with varying results. In this investigation, the therapy employed was principally the inhalation of an adrenalin-water-glycerin spray. Spirometric observations were made upon the patients in the hospital.

It was shown that the vital capacity in asthmatic dyspnea was below the average for the normal individual. Therapeutic improvement resulted in an increase in the volume, the increase being in direct relationship to the degree of improvement. The complementary aid was in most cases very greatly reduced. In 13 out of 18 cases, therapy brought about an increase. The reserve air showed a reduction from the normal of from 1500 cm. to 800 cm. and without exception was raised by therapy. The vital capacity fell in every case below the normal. Therapeutic relief from attack showed in every case an increase in vital capacity, not, however, in direct relationship to the degree of subjective improvement. The residual air was found to be above the normal limit.

During attacks most asthmatic patients were found to have a subnormal oxygen equivalent. This was raised by therapy. It was found that in several with the improvement of the asthmatic attack, more carbon dioxide was excreted per unit of ventilation. Respiration frequency during dyspnea was in most cases normal. The ratio of the inspiration-expiration time was found to be greater than that of the normal individual.

**Intolerance to Whitfield's Ointment as a Cause of Failure in the Treatment of Epidermophytosis**, by Samuel Ayres, Jr., M.D., and Nelson Paul Anderson, M.D., Los Angeles, Calif.

A summary of the causes of failure to cure Epidermophytosis is listed as follows:

1. Erroneous diagnosis. Chiefly nonparasitic eczema might be confused with the tinea infection.
2. Improper medication. Chiefly many proprietary remedies which are widely advertised are hopelessly inadequate.
3. Insufficient treatment. Failures here were primarily due to the fact that microscopic examinations were not made before the patient was dismissed.
4. Reinfection from shoes, floor, etc.
5. Intolerance to the medication.

The formula for Whitfield's ointment was as follows:

Salicylic acid .....	2
Benzoic acid .....	4
Benzoinated lard .....	30

The following conclusions were made from results of patch tests to the ointment and the various ingredients of the ointment:

Four cases of epidermophytosis of the feet are cited in which the eruption failed to respond to Whitfield's ointment after adequate treatment.

Strongly positive reactions to patch test of Whitfield's ointment were obtained in each case.

In two of these cases in which the ingredients of Whitfield's ointment were tested separately, the reactions were either negative or very weakly positive.

In view of the above findings, it is felt that intolerance to medication must be seriously considered in any case of proved dermatophytosis which fails to respond to adequate treatment.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**On The Contagiosity of Post-Operative Phlebitis**  
(*Sur la Contagiosite des Phlebites Post-Operatoires*) by Prof. J. Ducuing, Toulouse, La Presse Medicale, February 11, 1933.

In this rather unique contribution Prof. Ducuing, well known both as a leading surgeon of Southern France, and for his remarkable work as head of the Anti-Cancerous Center of Toulouse, presents some data in favor of the contagiosity of post-operative phlebitis, embracing embolism and thrombosis. While they are not conclusive, these data, looked at from an a priori point of view, make a good foundation for the support of a strong affirmative argument. Stating frankly that he is not sure, the author says that he is strongly impressed, because there are striking facts of easy proof which, when subjected to good sense, seem to plead in favor of contagiosity. "Whatever our prudence," says he, "we would not like to place ourselves in the situation of the surgeons in 1885; those there did not perceive that they carried microbes from the surgical wards to the maternity wards; from one patient to another; they laughed at the discoveries of Pasteur and denied, in the face of all proof, the contagiosity of erysipelas or puerperal infection."

The striking facts in connection with the contagiosity of post-operative phlebitis are presented in the following methodical manner:

**1. Epidemic characteristics in the appearance of the phlebitis.** Upon an endemic state more or less discrete that no surgeon can deny, there breaks out a veritable epidemic of phlebitis. Suddenly in the hospital service of Ducuing, six cases of post-operative phlebitis within a few days. The same situation is found in other hospitals.

(a) **Seasonal Influence.** For a long time J. L. Faure, Anselme Schwartz, Sauve, Auvray, Margrit Hanselmann, Manzac, have insisted upon the influence of the seasons in augmenting the number of cases of phlebitis, they being particularly prevalent during February and March. In 1919, Faure reported seven cases of post-operative embolism in a month, and for some time

operative work was discontinued. Formerly skeptical, the author was impressed by seasonal influence in February and March of 1930-31-32, there being a recrudescence of post-operative phlebitis, thrombosis and embolism during those months in each of the years indicated. It is suggested that the prevalence of grippe might have had an influence.

(b) **Influence of hygienic conditions.** It has been observed that the percentage of phlebitis is distinctly increased when the hospital is crowded and the surgical department unusually busy.

It is believed that more cases of phlebitis develop in certain rooms. An assistant of the author, having noticed this, took extra precautions in the case of a relative particularly predisposed, by the state of her lesions and her general condition, before an operation for myoma uteri. She was placed in a room at the end of the hospital where there was plenty of air and sunshine. No accident occurred.

The author is impressed by the very low percentage of phlebitis after urgent operations in the country, even when the conditions seemed to be very unfavorable. During ten years 534 emergency operations were done in the country—sometimes in huts. In this number there was no case of a sudden death, and but two cases of phlebitis of the leg vessels.

**2. Coincidence of phlebitis with other infections.** It was significant that the last "epidemic" of phlebitis at the Toulouse Anti-Cancerous Center was preceded by two cases of erysipelas in hospital. This is apparently mentioned to call attention to the possible accidental transmission of infection.

**3. Appearance of phlebitis after operations usually not followed by venous complications.** Phlebitis is common after abdominal exploration for inoperable cancer (60%); frequent after hysterectomy for fibromyoma and after prostatectomy (15%); exceptional after operations on inferior extremities—Payer had never seen a case. Now, during an "epidemic of phlebitis," the author has seen it after operations on any part of the body—several after breast operations, one after fracture above ankle, one after a plastic of foot.

**4. Common characteristics of certain cases of phlebitis during the course of an "epidemic."** During a period of recrudescence of phlebitis a considerable number of patients had a stitch in the side (point de cote), bloody sputum, small, circumscribed areas of congestion in base of right lung. During that period there were few or no other manifestations pointing to phlebitis. The author concludes that this "epidemic" was embologene."

In May, 1932, three patients in contiguous rooms were operated during a period of "recrudescence" of phlebitis in the hospital—one for retroversion and two for appendicitis. The ages were from 40 to 50. Each had a crural phlebitis, and each a long period of convalescence—from three and one-half to four and one-half months.

The author makes a distinction between infectious phlebitis and thrombosis that may take place in a sound vein. In the latter case the clot may not be firmly attached to the walls, and, for this reason, a massive embolism may take place. In the case of localized infectious



phlebitis the clots thrown into the circulation are usually small, but they carry infection.

Is the microbe of infectious phlebitis specific? The author is not able to answer, but he quotes "Rosenoff" (I am sure he means Rosenow), who does not hesitate to declare that it is. Experimental work which seems to prove it is cited.

Is the infection endogenous or exogenous? The data bearing on this point seem to indicate exogenous origin, and that emphasizes the danger of transmissibility.

How is it transmitted? The author believes that it is carried from patient to patient, or from source to patient, by the surgeon, the assistants, the nurses—possibly by visitors. Believing that, he, following an example already set by some accoucheurs, is beginning to isolate such cases. In addition, if there is a pronounced recrudescence—"une petite epidemie des phlebitis"—surgical work is stopped for several days. While nothing is yet definitely known about the contagiousness of phlebitis, the author contents himself by making observations and accumulating facts. He does not wish to be blinded by routine and preconceived ideas; neither does he wish to affirm opinions without sufficient experience. It is necessary to hold to the fact that our mind is turned toward post-operative phlebitis, that we do not permit one to escape, and that we discover them by signs unrecognized only a few years ago.

Calling upon surgeons to publish their impressions and their proofs, the article is finished with the following striking paragraph:

"Our duty is to protect those whose existence has been confided to our care against accidents that threaten them; we believe that at this time phlebitis, thrombosis and embolism constitute an agonizing problem which is the greatest, the most unexpected, the most impressive, the most grave of post-operative accidents." (*Notre devoir est de nous mettre à l'abri de tous les accidents qui menacent ceux dont on nous confie l'existence; nous considérons que les phlebitis, les thromboses et les embolies constituent à l'heure actuelle un problème angoissant et sont l'alea le plus grand, le plus imprévisible, le plus impressionnant, le plus grave des accidents post-opératoires*).

**Comment:** While this article is not based upon any demonstrable scientific fact, it calls attention to a grave situation that is present all the time in every large surgical service, for the prevention of which almost nothing has been done. That is my excuse for making this abstract extensive and comprehensive.

There is scarcely a staff meeting in any fairly large hospital at which there is not a report of a disaster due to post-operative phlebitis in some form—most often a pulmonary embolism having its origin in some entirely hidden area. What can be more tragic than a sudden death from such a disastrous situation—and yet we are confronted by it only too often. And, added to the tragedy is the professional frame of mind, through which it is looked upon as "a bolt from the blue" for which nothing can be done, preventive or otherwise. So, then, if an article like this by Ducuing does nothing more than make surgeons think and talk about the condition it will have done at least considerable good. After all, it was through precisely similar clinical ob-

servations by Oliver Wendell Holmes and Semmelweis that attention was first called to the contagiousness of puerperal fever.

—LeRoy Long.

The following interesting cases were reported at the meeting of the Paris Surgical Society, February 22, 1933, and published in *La Presse Medicale*, March 11, 1933:

1. Severe Contusion of the Kidney with Immediate Hemorrhage, and Secondary Hemorrhage a Month Later. (*Contusion Renale Grave avec Hematurie en Deux Temps. Intervalle Libre d'un Mois*).

The report was made by Professor Gosset, Surgeon-in-chief Salpêtrière Hospital, for Fune-Brentano, in whose service patient was treated.

Following a contusion in the region of the kidney, the patient, a young man of 24 years, had a pronounced hematuria for two days. The blood disappeared from the urine, and the patient went back to work eighteen days after the accident. Fourteen days later he was brought back to the hospital in a condition of almost complete exsanguination, and with an acute retention of urine, the bladder being greatly distended. Cystotomy was done and much clotted blood removed from the bladder. There was a transfusion of blood at the time of the operation.

The next day there was a grave hematuria, and a nephrectomy was done at once. There was extensive contusion with a rupture of the kidney. But little blood, in the form of a small hematoma, was found in the perirenal area. Patient recovered.

Gosset believes that the general opinion is, judging from cases reported in the literature, that secondary hemorrhage after extensive trauma of the kidney is most often due to an infection through which the hemostatic clot is disintegrated. He believes that there may be extensive damage of the kidney without a perirenal hematoma.

It is pointed out that in any case of severe trauma of the kidney hemostasis is made more difficult because of the inability of the vessels to contract in the presence of the cicatricial sclerosis associated with the inflammatory reaction.

2. Traumatic Rupture of the Liver (*Eclatement Traumatique du Foie*).

This report was made by Professor Lenormant for Bertrand, of Toulouse. A case is reported in which there was a trauma in the liver region, with clinical evidences of severe hemorrhage. There was satisfactory reaction, but after a free interval of eight days there were alarming symptoms indicating another hemorrhage. An operation was done, and a tampon was placed in a rupture found in the liver. The patient recovered.

Bertrand believes that late bleeding is due to a secondary rupture in connection with the displacement of a protecting clot, but Lenormant is of the opinion that it is due to the formation of a subcapsular clot, then secondary tearing of the capsule, with hemorrhage into the peritoneal cavity.

In the discussion, Sauve related the particulars in a similar case, and called attention to the

fact that a slight infection might interfere with normal healing of a wound of the liver. Louis Bazy believes that the secondary hemorrhage is probably due to rupture of the new capillaries which penetrate the clot.

Maisonnnet was of the opinion that infection with secondary thrombosis determines retarded hemorrhages of the solid intra-abdominal viscera.

### 3. Treatment of Varicose Veins (Traitment des Varices).

The reporter, Professor Alglove, makes a distinction between "symptomatic" varicose veins, some of which do not require any special treatment (varicose symptomatiques dont certaines peuvent etre respectees), but of which many can be removed surgically with success; and "essential" varicose veins which ought to be treated by total removal of the internal saphenous. He has practiced this method for longer than 30 years in more than a thousand cases, with excellent results immediate and final.

Attention is directed to the considerable development of pathology that can take place about the communicating veins, often followed by varicose masses, hemorrhages and ulcers.

Incidentally, Alglove looks upon the treatment of varicose veins by the injection of sclerosing agents as blind in its mode of action, often ineffective, and sometimes accompanied by accidents of various degrees or gravity.

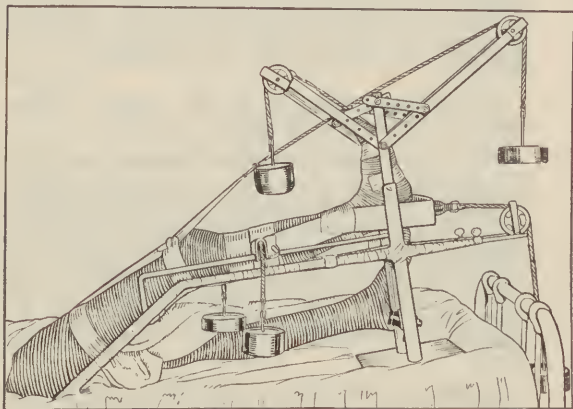
—LeRoy Long.

## BOOK REVIEWS

**Wheat, Egg or Milk Free Diets—With Recipes and Food Lists.** By Ray M. Balyeat, M.A., M.D., F.A.C.P., Associate Professor of Medicine and Lecturer on Diseases Due to Allergy, University of Oklahoma Medical School; Chief of the Allergy Clinic, University; Consulting Physician to St. Anthony's Hospital and to the State University Hospital; President of the Association for the Study of Allergy 1930-1931; Director, Balyeat Hay Fever and Asthma Clinic, assisted by Elmer M. Rusten, M.B., M.D., Chief of Section, Dermatology, and Ralph Bowen, B.A., M.D., Chief of Section, Pediatrics, of Balyeat Hay Fever and Asthma Clinic, Oklahoma City, Okla. Illustrated, Cloth, 160 pages, Price \$2.50. J. B. Lippincott Company, Philadelphia.

For many years Dr. Balyeat has made intensive study of the phenomena, symptoms and treatment of allergic diseases. In the course of these studies, he, with others, likewise interested, have discovered that idiosyncrasies in various foods have been the cause of conditions verging from the very mild to the very severe. In this volume Dr. Balyeat, and his assistants, after a discussion of the various diseases allied to or connected with allergic disturbances have been caused by the use of foods not fitting the patient's digestive apparatus, or we might say his allergic condition. One hundred pages of this book is devoted to recipes, running through breads, soups, meats, fish, vegetables, sauces, sandwiches, etc., a part having been reduced so that the housewife may know exactly how much of the various ingredients are necessary to serve so many people with certain food. The volume should be not only interesting to physicians interested in dietetics, but to nurses, dietitians, and housewives as well.

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Henke, Jos. J. .... Hydro  
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Gillespie, L. D.	Berwyn
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Hardy, Walter	Ardmore
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Jackson, T. J.	Ardmore
Johnson, Carroll A.	Wilson
Johnson, Geo. E.	Ardmore
Johnson, Walter M.	Ardmore
Looney, McDonald	Marietta
McNees, J. C.	Ardmore
Mote, W. R.	Ardmore
Pollock, John R.	Ardmore
Sain, W. C.	Ardmore
Stoner, R. W.	Wapaucka
Sullivan, R. C.	Ardmore
Von Keller, F. P.	Ardmore
Woods, L. B.	Ardmore

## CHEROKEE

Allison, J. S.	Tahlequah
Baines, Swartz	Tahlequah
Baird, A. A.	Tahlequah
Medearis, P. H.	Tahlequah
Thompson, Jos. M.	Tahlequah
Williams, R. M.	Tahlequah

## CHOCTAW

Boyer, H. L.	Ft. Towson
Gee, R. L.	Hugo
Hale, C. H.	Boswell
Harris, G. E.	Hugo
John W. N.	Hugo
Johnson, E. A.	Hugo
Kaiser, G. L.	Hugo
Lindsey, W. T.	Boswell
Miller, J. S.	Hugo
Moore, J. D.	Hugo
Shull, R. J.	Hugo
Wolf, Reed	Hugo

## CLEVELAND

Bobo, C. S.	Norman
Bond, I. T.	Norman
Boyd, T. M.	Norman
Brake, Arthur	Norman
Clifton, G. M.	Norman
Cooley, Ben H.	Norman
Day, J. L.	Norman
Gable, J. J.	Norman
Griffin, D. W.	Norman
Hilsmeyer, F. E.	Norman
Hood, James O.	Norman
Howell, N.	Noble
Howell, O. E.	Norman
Kniseley, H. B.	Norman
Lambert, J. B.	Lexington
Lowther, R. D.	Norman
Mayfield, W. T.	Norman
Merritt, Iva Stevens	Norman
Meyers, Wm. A.	Norman
Rayburn, Chas. R.	Norman
Reichert, R. J.	Moore
Schmidt, Eleanore	Norman
Steen, Carl	Norman
Stephens, E. F.	Norman
Thacker, R. E.	Lexington
Turley, L. A.	Norman

Wickham, M. M.	Norman
Wiley, G. W.	Norman
Willard, D. G.	Norman

## COMANCHE

Angus, H. A.	Lewton
Antony, Joseph	Lawton
Barber, G. S.	Lawton
Broshears Jackson	Lawton
Dunlap, E. B.	Lawton
Dunlap, P. G.	Lawton
Gooch, L. T.	Lawton
Ferguson, L. W.	Lawton
Gibson, J. P.	Kiowa Indian Hospital, Lawton
Halstead, A. B.	Temple
Hammond, F. W.	Lawton
Hues, C. P.	Lawton
Joyce, Chas. W.	Fletcher
Kerr, G. E.	Chattanooga
King, Louise S.	Lawton
Knee, L. C.	Lawton
Lutner, Thos. R.	Lawton
Malcolm, J. W.	Lawton
Martin, C. M.	Elgin
Mason, W. J.	Lawton
Mitchell, E. Brent	Lawton
*Stewart, A. H.	Lawton

## COTTON

Baker, G. W.	Walters
House, C. F.	Walters

## CRAIG

Adams, F. M.	Vinita
Bagby, E. L.	Vinita
Bagby, Louis	Vinita
Bradshaw, J. O.	Welch
Cornwell, N. L.	Meridian
Elam, B. L.	Centralia
Gastineau, F. T.	Vinita
Hays, P. L.	Vinita
Herron, A. W.	Vinita
Marks, W. R.	Vinita
Mitchell, R. L.	U. S. Vet. Hospital, Muskogee
Neer, C. S.	Vinita
Stough, C. S.	Vinita
Walker, J. F.	Grove

## CREEK

Bisbee, W. G.	Bristow
Caffield, A. W.	Drumright
Coppedge, O. S.	Depew
Cowart, O. H.	Bristow
Croston, G. C.	Sapulpa
Haas, Harry	Sapulpa
Harrington, W. E.	Depew
Hollis, J. E.	Bristow
King, E. W.	Bristow
Lampton, J. B.	Sapulpa
Lewis, P. K.	Sapulpa
Longmire, W. P.	Sapulpa
Mattenlee, J. M.	Sapulpa
McCallum, C. L.	Sapulpa
McDonald, E. R.	Manford
Mote, Paul	Sapulpa
Neal, W. J.	Drumright
Reynolds, E. W.	Bristow
Reynolds, S. W.	Drumright
Sanger, Paul	Drumright
Schrader, Chas.	Bristow
Sisler, Frank	Bristow
Starr, O. W.	Drumright
Sweeney, Roy	Sapulpa
Turner, J. W.	Sapulpa
Wells, J. M.	Bristow
Williams, J. Clay	Bristow

\*Deceased.



## CUSTER

Alexander, C. J. ....	Clinton
Allen, F. W. ....	Leedy
Darnell, E. E. ....	Ponca City
Frizzell, J. T. ....	Clinton
Gossom, K. D. ....	Custer
Hinshaw, J. R. ....	Butler
Lamb, Ellis ....	Clinton
Lamb, L. E. ....	Clinton
Loyd, E. M. ....	Taloga
McBurney, C. H. ....	Clinton
Parker, O. H. ....	Custer
Rogers, McLain ....	Clinton
Ruhl, N. E. ....	Weatherford
Seba, W. E. ....	Leedy
Vieregg, F. R. ....	Clinton
Wilson, H. H. ....	Clinton
Williams, Gordon D. ....	Weatherford

## GARFIELD

Aitken, W. A. ....	Enid
Baker, R. C. ....	Enid
Bitting, B. T. ....	Enid
Champlin, P. B. ....	Enid
Cotton, Lee W. ....	Enid
Duffy, Francis M. ....	Enid
Field, Julian ....	Enid
Francisco, Glenn ....	Enid
Francisco, J. W. ....	Enid
Gregg, O. R. ....	Enid
Hamble, V. R. ....	Enid
Harris, D. S. ....	Drummond
Hartman, Geo. ....	Sharon, Pa.
Hinson, Bruce R. ....	Enid
Hinson, T. B. ....	Enid
Hopkins, P. W. ....	Enid
Hudson, F. A. ....	Enid
Hudson, H. H. ....	Enid
Kendall, W. L. ....	Enid
Kiebler, W. G. ....	Enid
Mahoney, J. E. ....	Enid
Mayberry, S. N. ....	Enid
McEvoy, S. H. ....	Enid
McInnis, A. L. ....	Enid
Moore, J. W., 2716½ Robinson, Oklahoma City	
Newell, W. B. ....	Enid
Neilson, W. P. ....	Enid
Piper, A. S. ....	Enid
Rhodes, W. H. ....	Enid
Roberts, D. D. ....	Enid
Shannon, H. R. ....	Enid
Sheets, Marion E. ....	Enid
Swank, J. R. ....	Enid
Vandever, H. F. ....	Enid
Walker, John R. ....	Enid
Watson, John M. ....	Enid
Wigner, R. H. ....	Enid
Wilkins, A. E. ....	Covington
Wolf, E. J. ....	Waukomis

## GARVIN

Alexander, Robt. M. ....	Paoli
Burns, S. L. ....	Stratford
Callaway, John R. ....	Pauls Valley
Greening, W. P. ....	Pauls Valley
Gross, T. F. ....	Lindsay
Johnson, G. L. ....	Pauls Valley
Lindsey, R. H. ....	Pauls Valley
Lindsey, N. H. ....	Pauls Valley
*Markham, H. P. ....	Pauls Valley
Monroe, Hugh ....	Lindsay
Pratt, C. M. ....	Lindsay
Robberson, Marvin E. ....	Wynnewood
Shi, A. H. ....	Stratford

\*Deceased.

Smith, L. P. ....	Elmore City
Sullivan, C. L. ....	Elmore City
Taylor, E. F. ....	Maysville
Walker, Thomas ....	Wynnewood
Wilson, H. P. ....	Wynnewood

## GRADY

Ambrister, J. C. ....	Chickasha
Antle, H. C. ....	Chickasha
Bledsoe, Martha ....	Chickasha
Baze, Walter J. ....	Chickasha
Bonnell, W. L. ....	Chickasha
Boon, U. C. ....	Chickasha
Cox, C. P. ....	Ninnekah
Cook, W. H. ....	Chickasha
Dawson, E. L. ....	Chickasha
Downey, D. S. ....	Chickasha
Emanuel, Louis E. ....	Chickasha
Emanuel, Roy E. ....	Chickasha
Gerard, G. R. ....	Chickasha
Hampton, P. J. ....	Rush Springs
Hume, R. R. ....	Minco
Leeds, A. B. ....	Chickasha
Little, A. C. ....	Minco
Livermore, W. H. ....	Chickasha
Mason, Rebecca H. ....	Chickasha
McClure, H. M. ....	Chickasha
Mitchell, C. P. ....	Chickasha
Nunnery, A. W. ....	Chickasha
Renegar, J. F. ....	Tuttle
Woods, Louis, E. ....	Chickasha

## GRANT

Hamilton, A. L. ....	Manchester
Hardy, I. V. ....	Medford
Lawson, E. E. ....	Medford

## GREER

Austin, C. W. ....	Mangum
Border, G. F. ....	Mangum
Chambers, M. E. ....	Vinson
Cherry, G. P. ....	Mangum
Dodson, W. O. ....	Willow
Hollis, J. B. ....	Mangum
Lansden, J. B. ....	Granite
Lowe, J. T. ....	Mangum
McGregor, F. H. ....	Mangum
Meredith, J. S. ....	Duke
Nelson, J. H. ....	Granite
Pearson, L. E. ....	Mangum
Poer, E. M. ....	Mangum
Shaw, C. C. ....	919 Perrine Bldg, Okla. City

## HARMON

Allgood, John M. ....	Gould
Husband, W. G. ....	Hollis
Jones, James Edwin ....	Hollis
Lynch, Russell H. ....	Hollis
Ray, W. T. ....	Gould
Yeargan, W. M. ....	Hollis

## HASKELL

Hill, Arthur T. ....	Stigler
Johnson, Emmett ....	Kinta
Rumley, J. C. ....	Stigler
Terrell, Ross F. ....	Stigler
Turner, Thos. Boyd ....	Stigler
Williams, N. K. ....	McCurtain

## HUGHES

Atkins, W. D. ....	Holdenville
Bealer, Frank R. ....	P. O. Box 218, Holdenville
Bentley, J. A. ....	Allen
Butts, A. M. ....	Holdenville
Davenport, A. L. ....	Holdenville
Diggs, G. W. ....	Wetumka
Felix, T. B. ....	Holdenville

Floyd, W. E. ....	Holdenville
Ford, R. B. ....	Holdenville
Hamilton, S. H. ....	Non
Hemphill, J. A. ....	Wetumka
Hicks, C. A. ....	Wetumka
McCary, D. Y. ....	Calvin
Mitchell, P. E. ....	Wetumka
Morris, R. D. ....	Allen
Musser, J. F. ....	Calvin
Riley, W. S. ....	Holdenville
Taylor, W. L. ....	Holdenville
Wallace, C. S. ....	Holdenville

## JACKSON

Abernethy, Edward A. ....	Altus
Bird, Jesse ..... Eldorado	
Brown, R. F. ....	Altus
Collier, Knox ..... Tipton	
Crow, E. S. ....	Olustee
Curry, Roy Lee ..... Altus	
Fox, R. H. ....	Altus
Hix, J. B. ....	Altus
Mabry, E. W. ....	Altus
McConnell, L. H. ....	Altus
Rudell, W. P. ....	Altus
Spears, C. G. ....	Altus
Stultz, J. S. ....	Altus
Taylor, R. Z. ....	Blair

## JEFFERSON

Browning, W. M. ....	Waurika
Collins, D. B. ....	Waurika
Derr, J. I. ....	Waurika
Edwards, F. M. ....	Ringling
Maupin, C. M. ....	Waurika
McPherson, J. M. ....	Terral
Mingus, F. M. ....	Loco
Wade, L. L. ....	Ryan
Watson, J. W. ....	Ryan

## JOHNSON

Clark, Guy ..... Milburn	
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## KAY

Armstrong, W. O. ....	Ponca City
Arrendell, C. W. ....	Ponca City
Beatty, J. H. ....	Tonkawa
Becker, L. H. ....	Blackwell
Berry, G. L. ....	Blackwell
Browne, Howard S. ....	Ponca City
Browning, R. L. ....	Pawnee
Clift, Merle C. ....	Blackwell
Denham, T. W. ....	Three Sands
Driver, Geo. L. ....	Ponca City
Edmonds, R. L. ....	Blackwell
Gibson, R. B. ....	Ponca City
Gordon, D. M. ....	Ponca City
Hawkins, J. C. ....	Blackwell
Howe, J. H. ....	Ponca City
Leslie, W. M. ....	Blackwell
Mathews, Dewey ..... Tonkawa	
McElroy, Thomas ..... Ponca City	
Miller, D. W. ....	Blackwell
Moore, G. C. ....	Ponca City
Morgan, L. S. ....	Ponca City
Neal, L. G. ....	Ponca City
Niemann, George ..... Ponca City	
Northcutt, C. E. ....	Ponca City
Nuckols, A. S. ....	Ponca City
Risser, A. S. ....	Blackwell
Vance, L. C. ....	Ponca City
Waggoner, E. E. ....	Tonkawa
Wagner, J. C. ....	Ponca City
Walker, I. D. ....	Tonkawa

Werner, J. W. ....	Newkirk
White, M. S. ....	Blackwell
Winters, John S. ....	Ponca City

## KINGFISHER

Cavett, E. R. ....	Loyal
Dixon, A. ....	Hennessey
Fisk, Chas. W. ....	Kingfisher
Gose, C. O. ....	Hennessey
Hodgson, C. M. ....	Kingfisher
Rector, Newton ..... Hennessey	
Scott, Frank ..... Kingfisher	
Townsend, B. I. ....	Hennessey

## KIOWA

Adams, J. L. ....	Hobart
Bonham, J. M. ....	Hobart
Bryce, J. R. ....	Snyder
Finch, J. Wm. ....	Sentinel
Gray, Melvin ..... Mountain View	
Hathaway, A. H. ....	Mountain View
Land, J. A. ....	Hobart
Lloyd, H. C. ....	Hobart
Martin, F. F. ....	Roosevelt
Miles, E. P. ....	Hobart
Miller, W. W. ....	Gotebo
Moore, J. H. ....	Hobart
Preston, C. R. ....	Mountain Park
Ritter, J. D. ....	Roosevelt
Walker, F. E. ....	Lone Wolf
Watkins, B. H. ....	Hobart
Winter, J. D. ....	Hobart

## LATIMER

Evins, E. L. ....	Wilburton
Hamilton, E. B. ....	Wilburton
Harris, J. M. ....	Wilburton
Henry, T. L. ....	Wilburton
Rich, R. L. ....	Red Oak

## LeFLORE

Baker, F. P. ....	Talihina
Booth, G. R. ....	LeFlore
Collins, E. L. ....	Panama
Dean, Sam C. ....	Howe
Duff, W. M. ....	Braden
Fair, E. N. ....	Heavener
Hardy, Harold ..... Poteau	
Head, W. M. ....	Talihina
Minor, R. M. ....	Williams
Shippey, W. L. ....	Wister

## LINCOLN

Adams, J. W. ....	Chandler
Anderson, W. D. ....	Gen. Delivery Stroud
Baird, Jr., W. D. ....	Gen. Delivery Stroud
Baird, Sr., W. D. ....	Gen. Delivery Stroud
Brown, F. C. ....	Sparks
Cassidy, J. M. ....	Chandler
Erwin, Para F. ....	Gen. Delivery Wellston
Glenn, J. O. ....	Gen. Delivery Stroud
Hannah, R. H. ....	Prague
Hurlburt, E. D. ....	Meeker
Isles, H. C. ....	Prague
Jenkins, H. B. ....	Tryon
Marshall, A. M. ....	Chandler
Nickell, U. E. ....	Davenport
Norwood, F. H. ....	Prague
Robertson, C. W. ....	Chandler
Rollins, J. S. ....	Prague
Sosbee, J. W. ....	Stroud



## LOGAN

Allen, Robert	Guthrie
Barker, C. B.	Guthrie
Barker, E. O.	Guthrie
Barker, Pauline	Guthrie
Childers, A. G. T.	Mulhall
Goodrich, E. E.	Crescent
Gray, Dan	Guthrie
Hahn, L. H.	Guthrie
Hill, C. B.	Guthrie
Larkin, H. W.	Minco
Lehew, J. L.	Guthrie
Melvin, J. L.	Guthrie
Miller, William	Guthrie
Petty, C. S.	Guthrie
Ringrose, R. F.	Guthrie
Ritzhaupt, L. H.	Guthrie
Souter, J. E.	Guthrie
Trigg, F. E.	Guthrie

## MAJOR

Anderson, J. V.	Fairview
Specht, Elsie, L.	Fairview

## MARSHALL

Collins, J. A.	Willis
Haynie, W. D.	Hingston
Holland, J. L.	Madill
Logan, J. H.	Lebanon
Robinson, P. F.	Madill
Veazey, J. H.	Madill

## MAYES

Adams, Sylba, Hayward Hospital, Haywood, Ind.	
Bryant, W. C.	Choteau
Herrington, V. D.	Pryor
Hollingsworth, J. E.	Strong
Morrow, B. L.	Salina
Puckett, Carl	22 W. 6th St., Oklahoma City
Whitaker, W. J.	Pryor
White, L. C.	Adair

## McCLAIN

Barger, G. S.	Purcell
Dawson, O. O.	Wayne
Kolb, I. N.	Blanchard
McCurdy, W. C.	Purcell
Royster, Ralph L.	Purcell
Slover, B. W.	Blanchard

## McCURTAIN

Barker, N. L.	Broken Bow
Clarkson, A. W.	Valliant
Hall, Lyman S.	Box 391, Laredo, Texas
Huckaby, C. R.	Idabel
Lokey, J. P.	Broken Bow
Moreland, J. T.	Idabel
Moreland, W. A.	Idabel
Sherrill, R. H.	Broken Bow
Thompson, J. M.	Walters
Williams, R. D.	Idabel

## McINTOSH

Lee, N. P.	Checotah
Little, D. E.	Eufaula
Smith, F. L.	Eufaula
Tolleson, W. A.	Eufaula
West, G. W.	Eufaula

## MUSKOGEE

Ballantine, H. T.	Surety Bldg.
Berry, W. D.	Barnes Bldg.
Blakemore, J. L.	Barnes Bldg.
Bruton, L. D.	Commercial Nat'l. Bldg.
Campbell, J. F.	Barnes Bldg.
Coachman, E. H.	County Court House
DeGroot, C. E.	Manhattan Bldg.
Donnell, R. N.	Raymond Bldg.
Dorwart, Fred G.	Barnes Bldg.
Earnest, A. N., U. S. Veteran's Hosp., Oteen, N. C.	
Everley, A. W.	Equity Bldg.
Ewing, F. W.	Surety Bldg.
Fite, E. H.	Barnes Bldg.
Fite, W. P.	Barnes Bldg.
Fryer, S. J.	Surety Bldg.
Fullenwider, C. M.	Barnes Bldg.
Hamm, S. G.	Haskell
Harrod, A. T.	Oktaha
Heitzman, C. W.	Barnes Bldg.
Holcombe, R. N.	Surety Bldg.
Joblin, W. R.	Porter
King, Forrest S.	Surety Bldg.
Klass, O. C.	Surety Bldg.
McAlister, L. S.	Barnes Bldg.
Mitchell, S. E.	U. S. Veteran's Bureau
Mobley, A. L.	

Veteran's Administration Hosp., Albuquerque  
N. M.

Muller, J. A.

Veteran's Administration Home, Leavensworth,  
Kansas

Murphy, Chas. P.

Veteran's Administration Hosp., Hines, Ill.

Neely, S. D.	Com'l. Nat'l. Bldg.
Newhauser, Mayer	U. S. Veteran's Hosp.
Nichols, J. T.	Equity Bldg.
Oldham, Jr., I. B.	426 N. 6th
Oldham, I. B.	426 N. 6th
Osgood, W. W.	Equity Bldg
Rafter, J. G.	Manhattan Bldg.
Reynolds, John	First Nat'l. Bldg.
Rice, C. V.	Barnes Bldg.
Rothman, Herman	U. S. Veteran's Hosp.
Scott, Howell A.	Surety Bldg.
Shakelford, T. T.	Haskell
Thomas, L. M.	Webber Falls
Thompson, Claude A.	Com'l. Nat'l. Bldg.
Thompson, M. K.	Surety Bldg.
Tilton, W. B.	U. S. Veteran's Hosp.
Walton, F. L.	Surety Bldg.
Warterfield, F. E.	Com'l. Nat'l. Bldg
Webb, L. H.	U. S. Veteran's Hosp.
White, Chas. E.	North 6th Street
White, J. Hutchings	Surety Bldg.
Wilkiemeyer, F. J.	U. S. Veteran's Hosp.
Wolfe, Ira C.	426 N. 6th
Woodburn, Joel T.	Surety Bldg.

## MURRAY

Anadown, P. V.	Sulphur
Bailey, Howson C.	Sulphur
Brown, A. P.	Davis
Brown, B. B.	Davis
Luster, J. C.	Davis
Sadler, F. E.	Sulphur
Slover, Geo.	Sulphur
Sullivan, A. H.	Sulphur

## NOWATA

Dolson, F. R.	Nowata
Prentiss, H. H.	Nowata
Prentiss, M. B.	Nowata
Roberts, S. P.	Nowata
Scott, M. B.	Delaware
Sudderth, J. P.	Nowata

## NOBLE

Cavitt, R. A. ....	Morrison
Cooke, C. H. ....	Perry
Evans, A. M. ....	Perry
Francis, J. W. ....	Perry
Owen, B. A. ....	Box 515, Perry
Renfrow, T. H. ....	Perry

## OKFUSKEE

Adams, Allen C. ....	Weleetka
Bloss, C. M. ....	Okemah
Bombarger, C. C. ....	Paden
Brice, M. O. ....	Okemah
Cochran, C. M. ....	Okemah
Kennedy, J. A. ....	Okemah
Keys, R. ....	Okemah
Lucas, A. C. ....	Castle
Melton, A. S. ....	Okemah
Moyse, L. J. ....	Okemah
Pemberton, J. M., 217½ W. Commerce, Okla City	
Preston, J. R. ....	Weleetka
Preston, T. R. ....	Weleetka
Spickard, L. J. ....	Okemah

## OKLAHOMA

Adams, R. H. ....	Ramsey Tower
Akin, Robert H. ....	400 West 10th
Alford, J. M. ....	Med. Arts Bldg.
Allen, E. P. ....	Osler Bldg.
Andrews, Leila E. ....	Osler Bldg.
Arrington, C. T. ....	805 N. Walnut
Bailey, F. M. ....	427 West 9th
Bailey, W. H. ....	300 West 12th
Balyeat, Ray M. ....	Osler Bldg.
Barker, Charles E. ....	Osler Bldg.
Batchelor, John J. ....	Med. Arts Bldg.
Bates, C. E. ....	Federal Bldg.
Beyers, M. R. ....	2006 West 39th
Binkley, J. G. ....	Med. Arts Bldg.
Birge, Jack P. ....	St. Anthony's Hosp.
Blachley, C. D. ....	2752 N. W. 18th
Blachley, Lucile ....	2752 N. W. 18th
Blesh, A. L. ....	300 West 12th
Boatright, Lloyd C. ....	Med Arts Bldg.
Bolend, Floyd J. ....	Osler Bldg.
Bolend, Rex ....	Med. Arts Bldg.
Bondurant, C. P. ....	Med. Arts Bldg.
Bonham, Wm. L. ....	Med. Arts Bldg.
Boggs, Nathan ....	Perrine Bldg.
Borecky, Geo. L. ....	511 Ramsey Tower
Bradley, H. C. ....	Perrine Bldg.
Branham, D. W. ....	300 West 12th
Brewer, A. M. ....	Perrine Bldg.
Brittain, Fannie Lou ....	400 West 10th
Brown, Chas. P. ....	Perrine Bldg.
Brown, G. W. ....	Med. Arts Bldg.
Brundage, C. L. ....	1200 N. Walker
Buchanon, T. A. ....	American Nat'l Bldg.
Bulla, Gordon C. ....	400 West 10th
Burton, John F. ....	1200 N. Walker
Butler, H. W. ....	1200 N. Walker
Canada, J. C. ....	240 West Commerce
Cates, Albert ....	Med. Arts Bldg.
Caviness, J. J. ....	1200 N. Walker
Charney, L. H. ....	132 West 4th
Chase, A. B. ....	Colcord Bldg.
Cailey, Leo F. ....	Med. Arts Bldg.
Clark, Fred H. ....	
U. S. Veteran's Hosp., Aspinwall, Pa.	
Cloudman, H. H. ....	Med. Aras Bldg.
Clymer, C. E. ....	Med. Arts Bldg.
Coley, A. J. ....	Med. Arts Bldg.
Collins, H. Dale ....	Med. Arts Bldg.
Cooper, F. M. ....	Med. Arts Bldg.

Copeland, E. K. ....	Cordell
Cunningham, S. R. ....	Med. Arts Bldg.
Curtis, S. J. ....	215½ SW. 25th
Daily, H. J. ....	Med. Arts Bldg.
Davis, C. E. ....	Med. Arts Bldg.
Davis, E. P. ....	First Nat'l Bldg.
Dersch, Walter H. ....	Med. Arts Bldg.
Dickson, Green K. ....	1200 N. Walker
Dill, Francis E. ....	Med. Arts Bldg.
Dougherty, Virgil F. ....	Gorei, Abyssinia, Africa
Dowdy, T. W. ....	Med. Arts Bldg.
Duncan, D. G. ....	Med. Arts Bldg.
Early, R. O. ....	Med. Arts Bldg.
Eastland, W. E. ....	Med. Arts Bldg.
Eley, N. Price ....	400 W. 10th
Emenhiser, Leo K. ....	800 East 13th.
Epley, C. O. ....	1200 N. Walker
Erwin, F. B. ....	Med. Arts Bldg.
Eskridge, Jr., J. B. ....	1200 N. Walker
Fagin, Herman ....	400 NW. 10th
Farris, B. D. ....	First Nat'l Bldg.
Ferguson, E. S. ....	Med. Arts Bldg.
Ferguson, Gordon E. ....	Med. Arts Bldg.
Field, C. H. ....	Med. Arts Bldg.
Fishman, C. J. ....	132 West 4th
Fitz, R. G. ....	

## Taming, Fu Hoppi, Province North China

Flesher, T. H. ....	Edmond
Frierson, S. E. ....	Med. Arts Bldg.
Fulton, Clifford C. ....	Med. Arts Bldg.
Fulton, George ....	American Nat'l Bldg.
Garrison, Geo. H. ....	Osler Bldg.
Gee, O. J. ....	Med. Arts Bldg.
Glomset, John L. ....	621 Osler Bldg.
Goldfain, E. ....	717 No. Robinson
Goodwin, R. Q. ....	Med. Arts Bldg.
Graening, P. K. ....	First Nat'l Bldg.
Gray, Floyd ....	1200 N. Walker
Gregory, M. S. ....	2209 NW. 22nd
Guthrie, A. L. ....	Osler Bldg.
Hall, Clark H. ....	Med. Arts Bldg.
Hammond, O. O. ....	Med. Arts Bldg.
Haney, A. H. ....	Med. Arts Bldg.
Harbison, Frank ....	Terminal Bldg.
Harbison, J. E. ....	Terminal Bldg.
Harris, H. W. ....	Osler Bldg.
Haskett, Paul E. ....	Hales Bldg.
Hatchett, J. A. ....	Med. Arts Bldg.
Hathaway, E. P. ....	Perrine Bldg.
Hayes, B. A. ....	Osler Bldg.
Hazel, O. G. ....	Med. Arts Bldg.
Heatley, John E. ....	Med. Arts Bldg.
Hetherington, A. J. ....	2014 Gatewood
Hicks, Fred B. ....	Med. Arts Bldg.
Hirshfield, A. C. ....	Med. Arts Bldg.
Holliday, J. R. ....	1200 N. Walker
Hood, F. Redding ....	Osler Bldg.
Howard, R. M. ....	Osler Bldg.
Hunter, Geo. ....	Wewoka
Hyroop, Gilbert L. ....	Med. Arts Bldg.
Jacobs, Minard F. ....	Med. Arts Bldg.
Janco, Leon ....	10 West Park
Jeter, Hugh ....	Osler Bldg.
Jolly, W. J. ....	614 West 14th
Jones, Hugh C. ....	Med. Arts Bldg.
Keller, W. F. ....	Med. Arts Bldg.
Kelley, John F. ....	Med. Arts Bldg.
Kelso, Joseph ....	Med. Arts Bldg.
Keltz, Bert F. ....	Med. Arts Bldg.
Kernodle, S. E. ....	119 West 5th
Kimball, Geo. H. ....	1302 Ramsey Tower
Knowles, Chas. E., 148½ Main Street, Seminole	
Kuchar, V. ....	Yukon
Kuhn, John F. ....	Med. Arts Bldg.
Lain, E. S. ....	Med. Arts Bldg.
Lane, L. C. ....	First Nat'l Bldg.



Lansford, W. M. ....328 Est 11th  
 LaMotte, Geo. A. ....Colcord Bldg.  
 Langston, Wann .....Med. Arts Bldg.  
 Lawson, N. E. ....1616 N. W. 26th  
 Lehmer, E. E. ....132 West 4th  
 Lewis, A. R. ....Hightower Bldg.  
 Lingenfelter, F. M. ....Osler Bldg.  
 Little, John R. ....501 West 12th  
 Long, LeRoy .....Med. Arts Bldg.  
 Long, LeRoy D. ....Med. Arts Bldg.  
 Long, Ross D. ....617 N. W. 14th  
 Long, Wendell .....Med. Arts Bldg.  
 Love, Robert S. ....Med. Arts Bldg.  
 Lowry, Dick .....1200 N. Walker  
 Lowry, Tom .....1200 N. Walker  
 Loy, C. F. ....Perrine Bldg.  
 Lyon, J. I. ....Edmond  
 MacCabe, R. S. ....Med. Arts Bldg.  
 Macdonald, J. C. ....300 West 12th  
 Margo, Elias .....717 No. Robinson  
 Martin, Howard C. ....Med. Arts Bldg.  
 Martin, J. T. ....Osler Bldg.  
 Mathews, G. F. ....State Capitol Bldg.  
 McBride, E. D. ....717 No. Robinsno  
 McGee, J. P. ....1200 No. Walker  
 McHenry, D. D. ....Med. Arts Bldg.  
 McHenry, L. C. ....Med. Arts Bldg.  
 McLauchlin, J. R. ....Med. Arts Bldg.  
 McNeil, Phillip M. ....Med. Arts Bldg.  
 Miles, W. H. ....208 City Hall Bldg.  
 Mills, R. C. ....City Hall Bldg.  
 Moffitt, J. A. ....800 E. 13th  
 Moore, C. D. ....Perrine Bldg.  
 Moore, Ellis .....Med. Arts Bldg.  
 Moorman, Floyd .....Osler Bldg.  
 Moorman, L. J. ....Osler Bldg.  
 Moor, H. D. ....800 East 13th  
 Moreledge, Walker .....Osler Bldg.  
 Morgan, C. A. ....First Nat'l Bldg.  
 Moth, M. V. ....American Nat'l Bldg.  
 Murdoch, R. L. ....Med. Arts Bldg.  
 Musick, E. R. ....Med. Arts Bldg.  
 Mussill, W. M. ....Med. Arts Bldg.  
 Myers, Ralph E. ....Osler Bldg.  
 Nagle, Patrick S. ....Med. Arts Bldg.  
 Nicholson, B. H. ....300 West 12th  
 Noel, Robert L. ....1210 N. Phillips  
 Nunnery, E. E. ....253½ S. Robinson  
 O'Donoghue, D. H. ....Med. Arts Bldg.  
 Padberg, J. W. ....1800 West 16th  
 Parks, K. G. ....Med. Arts Bldg.  
 Paulus, D. D. ....300 West 12th  
 Penick, G. ....Colcord Bldg.  
 Phelps, A. S. ....Med. Arts Bldg.  
 Pine, John S. ....Med. Arts Bldg.  
 Points, Blair .....Luther  
 Postelle, J. M. ....Med. Arts Bldg.  
 Pounds, Carroll M. ....Osler Bldg.  
 Price, J. S. ....Osler Bldg.  
 Reck, John A. ....Colcord Bldg.  
 Reed, Horace .....1200 N. Walker  
 Reed, James R. ....Med. Arts Bldg.  
 Reichman, Ruth S. ....Med. Arts Bldg.  
 Riley, John W. ....119 West 5th  
 Riely, Lea A. ....Med. Arts Bldg.  
 Robinson, J. H. ....300 West 12th  
 Roddy, John A. ....Ramsey Tower  
 Roland, M. M. ....Med. Arts Bldg.  
 Rosenberger, F. E. ....Security Bldg.  
 Rountree, C. R. ....1200 N. Walker  
 Rucks, Jr., W. W. ....300 West 12th  
 Rucks, W. W. ....300 West 12th  
 Ruhl, A. M. ....Edmond  
 Runkle, R. E. ....528 NW. 21st  
 Rusten, Elmer M. ....1200 N. Walker  
 Salomon, A. L. ....1200 N. Walker

Salsbury, C. R. ....200 East 13th  
 Sands, A. J. ....Choctaw  
 Sanger, Fenton A. ....Key Bldg.  
 Sanger, F. M. ....Key Bldg.  
 Sanger, Winnie M. ....Key Bldg.  
 Shelton, J. W. ....Med. Arts Bldg.  
 Smith, Chas. A. ....Med. Arts Bldg.  
 Smith, Delbert G. ....Med. Arts Bldg.  
 Smith, M. ....1400 Classen Blvd.  
 Snow, J. B. ....1200 No. Walker  
 Stanbro, G. E. ....Med. Arts Bldg.  
 Starry, L. J. ....1200 No. Walker  
 Stilwell, R. J. ....First Nat'l Bldg.  
 Stone, S. N. ....Edmond  
 Stout, Marvin E. ....209 West 13th  
 Strother, S. P. ....120 NW. 23rd  
 Sullivan, Elijah .....Hightower Bldg.  
 Sullivan, Ernest .....Hightower Bldg.  
 Tabor, Geo. R. ....First Nat'l Bldg.  
 Taylor, C. B. ....Med. Arts Bldg.  
 Taylor, W. M. ....1200 N. Walker  
 Thompson, Wayman J. ....1200 N. Walker  
 Todd, H. C. ....Colcord Bldg.  
 Townsend, C. W. ....Med. Arts Bldg.  
 Trice, S. T. ....133½ West Commerce  
 Turner, Henry H. ....1200 N. Walksr  
 Underwood, E. L. ....Hales Bldg.  
 Vahlberg, E. R. ....Perrine Bldg.  
 Von Wedel, C. O. ....Colcord  
 Wails, T. G. ....Med. Arts Bldg.  
 Wallace, W. J. ....Med. Arts Bldg.  
 Warmack, J. C. ....1615 N. Robinson  
 Weir, M. W. ....715 Ramsey Tower  
 Wells, Eva .....Med. Arts Bldg.  
 Wells, W. W. ....Med. Arts Bldg.  
 West, W. K. ....1200 N. Walker  
 Westfall, L. M. ....Med. Arts Bldg.  
 White, A. W. ....Med. Arts Bldg.  
 White, Oscar R. ....Osler Bldg.  
 White, Phil E. ....Perrine Bldg.  
 Wildman, S. F. ....Med. Arts Bldg.  
 Wilkins, Harry .....Med. Arts Bldg.  
 Williams, H. M. ....Med. Arts Bldg.  
 Williams, Leonard C. ....1200 N. Walker  
 Williamson, W. H. ....First Nat'l Bldg.  
 Wilson, E. C. ....Med. Arts Bldg.  
 Wilson, K. J. ....Med. Arts Bldg.  
 Wolff, J. P. ....1200 N. Walker  
 Woodward, Neil W. ....1200 N. Walker  
 Wright, Harper .....240 West Commerce

## OKMULGEE

Alexander, T. C. ....Okmulgee  
 Bollinger, I. W. ....Henryetta  
 Boswell, H. D. ....Henryetta  
 Carlross, T. C. ....Morris  
 Carnell, M. D. ....Okmulgee  
 Cott, W. M. ....Okmulgee  
 Edwards, J. G. ....Okmulgee  
 Glismann, M. B. ....Okmulgee  
 Holmes, A. R. ....Henryetta  
 Hudson, W. S. ....Okmulgee  
 Kilpatrick, G. A. ....Henryetta  
 Leslie, S. B. ....Okmulgee  
 Matheney, J. C. ....Okmulgee  
 McKinney, G. Y. ....Henryetta  
 Ming, C. M. ....Okmulgee  
 Mitchener, W. C. ....Okmulgee  
 Nelson, J. P. ....Schulter  
 Rains, H. L. ....Okmulgee  
 Randel, D. M. ....Okmulgee  
 Randel, H. O. ....Okmulgee  
 Rembert, J. J. C. ....Okmulgee  
 Rodda, E. D. ....Okmulgee  
 Robinson, J. C. ....Henryetta

Sanderson, W. C. .... Henryetta  
 Simpson, N. N. .... Henryetta  
 Stark, W. W. .... Okmulgee  
 Torrance, L. B. .... Okmulgee  
 Vernon, W. C. .... Okmulgee  
 Wallace, V. M. .... Morris  
 Watson, F. S. .... Okmulgee  
 Watson, W. S. .... Okmulgee

## OSAGE

Aaron, W. H. .... Pawhuska  
 Alexander, E. T. .... Barnsdall  
 Barritt, R. J. .... Pawhuska  
 Baylor, R. A. .... Fairfax  
 Brady, R. F. .... 74 Pao Tai Chai, Nanking, China  
 Carmicheal, M. M. .... Osage  
 Caton, C. N. .... Wynona  
 Chase, W. W. .... Barnsdall  
 Colley, T. J. .... Hominy  
 Daly, John F. .... Pawhuska  
 Dozier, B. E. .... Shidler  
 First, F. R. .... 1133 S. Harvard, Tulsa  
 Gentry, R. C. .... Pawhuska  
 Govan, T. P. .... Pawhuska  
 Guild, C. H. .... Shidler  
 Hemphill, Paul H. .... Pawhuska  
 Karasek, M. .... Shidler  
 Keyes, E. C. .... Shidler  
 Logan, C. K. .... Hominy  
 Lipe, E. N. .... Fairfax  
 Reed, J. M. .... Magnolia Springs, Ga.  
 Rust, M. E. .... Pawhuska  
 Sullivan, B. F. .... Barnsdall  
 Summers, H. L. .... Public Square, Marion, Ill.  
 Walker, G. I. .... Hominy  
 Walker, Roscoe .... Pawhuska  
 Williams, C. W. .... Pawhuska  
 Wood, Harold .... Harlington, Texas  
 Worten, Divonis .... Pawhuska

## OTTAWA

Aisenstadt, E. Albert .... Picher  
 Barry, J. R. .... Picher  
 Black, W. H., 3426 N. 9th St., Kansas City, Mo.  
 Cannon, R. F. .... Miami  
 Chestnut, W. C. .... 600 Main St., Galena, Kans.  
 Connell, Matt .... Picher  
 Colvert, G. W. .... Miami  
 Cooter, A. M. .... Miami  
 Craig, J. W. .... Miami  
 DeArman, M. M. .... Miami  
 DeArman, Tom M. .... Miami  
 DeTar, Geo. A. .... Miami  
 Dolan, W. M. .... Picher  
 Hampton, J. B. .... Commerce  
 Helm, F. P.  
   %City Board of Health, Topeka, Kans.  
 Hughes, A. R. .... Wyandotte  
 Jacobs, J. C. .... Miami  
 Jacoby, J. S. .... Commerce  
 Kitchen, John C. .... Picher  
 Lightfoot, J. B. .... Miami  
 McCallum, Chas. .... Quapaw  
 McNaughton, G. P. .... Miami  
 Meriwether, F. V.  
   U. S. Marine Hosp., New Orleans, La.  
 Miller, H. K. .... Fairland  
 Moon, J. T. .... Miami  
 Pinnell, General .... Miami  
 Ransone, J. T.  
   U. S. Veteran's Hosp., Hampton, Va.  
 Ralston, B. W. .... Commerce  
 Russell, Richard .... Picher

Shelton, B. W. .... Miami  
 Smith, W. B. .... Miami  
 Wormington, F. L. .... Miami

## PAYNE

Beach, C. H. .... Glencoe  
 Bergegrun, Katherine .... Tehachapi, Calif.  
 Cleverdon, L. A. .... Stillwater  
 Davis, Benjamin .... Cushing  
 Davidson, W. N. .... Cushing  
 Friedmann, Paul W. .... Stillwater  
 Graham, R. N. .... Yale  
 Harris, E. M. .... Cushing  
 Holbrook, W. R. .... Perkins  
 Herrington, D. J. .... Cushing  
 Hudson, W. B. .... Yale  
 Leatherock, R. E. .... Cushing  
 Love, T. A. .... Cushing  
 Manning, H. C. .... Cushing  
 Martin, Emmett O. .... Cushing  
 Martin, J. F. .... Stillwater  
 Mitchell, L. A. .... Stillwater  
 Pryor, Robert B. .... 221 E. 9th, Stillwater  
 Richardson, P. M. .... Cushing  
 Roberts, R. E. .... Stillwater  
 Waggoner, R. E. .... Stillwater  
 Wilhite, L. R. .... Box 36, Perkins

## PAWNEE

Beitmen, C. E. .... Skedee  
 LeHew, Elton W. .... Pawnee  
 Roberts, J. A. .... Cleveland  
 Robinson, E. T. .... Cleveland  
 Spaulding, H. B. .... Ralston

## PITTSBURG

Bartheld, F. T. .... McAlester  
 Barton, V. H. .... McAlester  
 Baum, F. J. .... McAlester  
 Bright, J. B. .... Kiowa  
 Bunn, A. D. .... Savanna  
 Bussey, H. N. .... 2043 N. W. 23rd, Okla. City.  
 Carlock, A. E. .... Hartshorne  
 Chapman, T. S. .... McAlester  
 Crews, J. W. .... Atwood  
 Davis, J. E. .... McAlester  
 Dorrough, Joe .... Haileyville  
 Echols, J. W. .... McAlester  
 George, L. J. .... Stuart  
 Hailey, W. P. .... Haileyville  
 Harris, C. T. .... Kiowa  
 Hartshorne, G. E. .... McAlester  
 Johnston, J. C. .... McAlester  
 Kies, B. B. .... North McAlester  
 Kilpatrick, G. A. .... McAlester  
 Kuyrkendall, L. C. .... McAlester  
 Lewallen, W. P. .... Canadian  
 McCarley, T. H. .... McAlester  
 Miller, F. A. .... Hartshorne  
 Munn, J. A. .... McAlester  
 Norris, T. T. .... Krebs  
 Palmer, Clara L. .... North McAlester  
 Parks, J. F. .... McAlester  
 Pearce, C. M. .... McAlester  
 Pemberton, R. K. .... McAlester  
 Ramsey, W. G. .... Quinton  
 Rice, O. W. .... McAlester  
 Sames, W. W. .... Hartshorne  
 Shankle, H. D.  
   U. S. Veteran's Hosp., Ft. Harrison, Montana  
 Shuller, E. H. .... McAlester  
 Thomas, Ernest .... Quinton  
 Wait, Will C. .... McAlester  
 Welch, A. J. .... McAlester



Williams, C. O. ....	McAlester
Willour, L. S. ....	McAlester
Wilson, Herbert ....	McAlester
Wilson, McClellan ....	McAlester

## PONTOTOC

Breco, J. G. ....	Ada
Brydia, Catherine ....	Ada
Canada, E. A. ....	Ada
Craig, J. R. ....	Ada
Cummings, Isham L. ....	Ada
Dawson, B. B. ....	Ada
Dean, W. F. ....	Ada
Foerster, Hervey A. ....	Ada
Holloway, T. R. ....	Stonewall
King, R. F. ....	Ada
Lewis, E. F. ....	Ada
Lewis, M. L. ....	Ada
McKeel, Sam ....	Ada
McNew, M. C. ....	Ada
Miller, O. H. ....	Ada
Needham, C. F. ....	Ada
Ross, S. P. ....	Ada
Rutledge, J. A. ....	Ada
Sugg, Alfred R. ....	Ada
Threlkeld, W. R. ....	Ada
Webster, M. M. ....	Ada
Welborn, O. E. ....	Ada

## POTTAWATOMIE

Anderson, Robert M. ....	Shawnee
Applewhite, G. H. ....	Shawnee
Baker, M. A. ....	Shawnee
Ball, W. A. ....	Wanetta
Baxter, Geo. Simpson ....	Shawnee
Blount, W. T. ....	Maud
Brown, R. A., R. F. D. Belmont ....	Prague
Byrum, James M. ....	Shawnee <sup>e</sup>
Campbell, H. G. ....	Shawnee
Carson, F. L. ....	Shawnee
Cordell, U. S. ....	McComb
Culbertson, R. R. ....	Maud
Cullum, J. E. ....	Earlsboro
Douglas, R. A. ....	Asher
Fortson, J. L. ....	Tecumseh
Gallaher, F. Clinton ....	Shawnee
Gallaher, Wm. M. ....	Shawnee
Gaston, John I. ....	Shawnee
Gillick, David W. ....	Shawnee
Hughes, Horton E. ....	Shawnee
Hughes, James E. ....	Shawnee
Isvekov, V. G. ....	Shawnee

State Prison Laboratory, Huntsville, Texas

Kaylor, R. C. ....	McLoud
Mathews, Wm. F. ....	Tecumseh
McAdams-Williams, Alpha ....	Shawnee
McClendon, J. W. ....	Earlsboro
McFarling, A. C. ....	Shawnee
Morrison, H. C. ....	Maud
Newlin, Frances P. ....	Shawnee
Paramore, Chas. F. ....	NShawnee
Rice, E. Eugene ....	Shawnee
Rowland, T. D. ....	Shawnee
Royster, J. H. ....	Wanette
Stevens, Walter, S. 315 Federal Bldg., Okla. City	
Stooksbury, J. M. ....	Shawnee
Terrel, E. P. ....	Shawnee
Turner, James H. ....	

Cumberland Hosp., New York City, Borough of	
Brooklyn, No. Portland Ave., at Auburn Place.	
Wagner, H. A. ....	Shawnee
Walker, J. A. ....	Shawnee
Walker, J. E. ....	Shawnee

## PUSHMATAHA

Ball, Ernest ....	Platt Nat'l. Park, Sulphur
Burnett, J. A. ....	Waldron, Arkansas
Connally, D. W. ....	Nashoba
Huckabay, B. M. ....	Antlers
Johnson, H. C. ....	Antlers
Kirkpatrick, J. ....	Tuskahoma
Lawson, John S. ....	Clayton
Patterson, E. S. ....	Pushmataha

## ROGERS

Anderson, F. A. ....	Claremore
Arnold, A. M. ....	Claremore
Bassman, Caroline ....	Claremore
Beson, C. W. ....	Claremore
Bushyhead, J. C. ....	Claremore
Collins, B. F. ....	Claremore <sup>e</sup>
Hays, W. F. ....	Claremore
Howard, W. A. ....	Chelsea
Jennings, K. D. ....	Chelsea
Mason, W. S. ....	Claremore
Meloy, R. C. ....	Claremore
Nelson, Ira ....	Claremore

## SEMINOLE

Bates, J. A. ....	Seminole
Black, W. R. ....	Rout No. 3, Seminole
Briggs, T. H. ....	Wewoka
Butler, O. C. ....	Seminole
Chambers, Claude S. ....	Seminole
Deaton, A. N. ....	Wewoka
Geisen, Andrew F. ....	Konawa
Grimes, J. P. ....	Wewoka
Hampton, K. P. ....	Seminole
Harber, J. N. ....	Seminole
Harrison, T. F. ....	Wewoka
Huddleston, W. L. ....	Konawa
Kiles, H. A. ....	Konawa
Knight, W. L. ....	Wewoka
Long, W. J. ....	Konawa
Lyons, D. J. ....	Seminole
Martin, W. S. ....	Wewoka
McAlister, E. R. ....	Seminole
McGovern, J. D. ....	Wewoka
Mills, J. T. ....	Sasakwa
Mills, N. W. ....	Snomac
Mosher, D. D. ....	Seminole
Pace, L. R. ....	Seminole
Price, J. T. ....	Seminole
Shaw, D. B. ....	Seminole
Stephens, A. B. ....	Seminole
Van Sandt, Guy B. ....	Wewoka
Van Sandt, M. M. ....	Wewoka
Walker, A. A. ....	Wewoka
Ware, T. H. ....	Seminole
Wright, H. L. ....	Sasakwa

## SEQUOYAH

Bryan, Cecil	
Oklahoma Public Health Dept., Okla. City	
Jones, S. B. ....	Sallisaw
Morrow, J. A. ....	Sallisaw

## STEPHENS

Brewer, J. W. ....	Marlow
Burnett, Berry, H. ....	Duncan
Carmichael, J. B. ....	Duncan
Chumley, C. P. ....	Duncan
Garrett, S. S. ....	County Line
Harrison, C. M. ....	Comanche
Ivy, Wallis S. ....	Duncan
Lindley, E. C. ....	Duncan
Linzy, J. H. ....	Comanche

Long, D. ....	Duncan
McClain, W. Z. ....	Marlow
McMahan, A. M. ....	Duncan
Nieweg, J. W. ....	Duncan
Overton, L. M. ....	Tecumseh
Patterson, James L. ....	Duncan
Pruitt, C. C. ....	Comanche
Richardson, R. W. ....	Carnegie
Salmon, W. T. ....	Duncan
Talley, C. N. ....	Marlow
Weedn, A. J. ....	Duncan

## TEXAS

Blackwell, F. E. ....	Hooker
Hayes, R. B. ....	Guymon
Lee, Daniel S. ....	Guymon
Reed, Paul H. ....	Texhoma
Risen, Wm. J. ....	Hooker
Smith Morris ....	Guymon

## TILLMAN

Allen, C. C. ....	Frederick
Arrington, J. E. ....	Frederick
Bacon, O. G. ....	Frederick
Childers, J. E. ....	Tipton
Fisher, R. L. ....	Frederick
Fuqua, W. A. ....	Grandfield
McKellar, M. M. ....	Loveland
Osborne, Jr., J. D. ....	Frederick
Reynolds, J. C. ....	Frederick
Spurgeon, T. F. ....	Frederick

## TULSA

Allen, V. K. ....	101 Medical Arts Bldg.
Allison, T. P. ....	Sand Springs
Ament, C. M. ....	305 Ritz Bldg.
Armstrong, O. C. ....	915 Medical Arts Bldg.
Atchley, R. Q. ....	507 Medical Arts Bldg.
Atkins, P. N. ....	1011 Medical Arts Bldg.
Baum, E. E. ....	510 Medical Arts Bldg.
Barry, W. R. ....	20 No. College
Beyer, J. W. ....	501 Palace Bldg.
Billington, J. J. ....	404 Med. Arts Bldg.
Black, H. J. ....	209 Medical Arts Bldg.
Bolton, J. Fred ....	211 Medical Arts Bldg.
Bradfield, S. J. ....	607 Medical Arts Bldg.
Bradley, C. E. ....	202 Medical Arts Bldg.
Braswell, J. C. ....	1109 Medical Arts Bldg.
Brogden, J. C. ....	415 Medical Arts Bldg.
Brookshire, J. E. ....	507 Palace Bldg.
Browne, Henry S. ....	615 Medical Arts Bldg.
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## A SYMPOSIUM ON HEADACHE

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Presented before Section on Diseases of Eye, Ear, Nose and Throat, Forty-first Annual Session,  
Oklahoma State Medical Association, Oklahoma City, May 16, 1933.

### HEADACHE

J. LESLIE LE HEW, M.D.  
GUTHRIE

The symptom of headache is the most insistent and difficult manifestation of disease from the standpoint of relief. The agony produced by the symptom is particularly trying for the patient to endure and in very many instances treatment and relief of the symptom is demanded before study and etiological elimination of the basic disease is possible.

There are few symptoms which may be produced by so many widely divergent causes. Headache appears in practically all types of disease. Those developed by tissue change, by infectious agents, by chemical or metabolic factors, by traumatism and by emotional and psychic disorders.

Headache as a diagnostic sign or indication is also of very great importance. It occurs in some of the most difficult diagnostic problems, so that the practitioner is required to study the symptom, in some instances, almost as a disease entity would be considered.

Headache varies greatly in its frequency, duration and intensity. Some people declare they have never experi-

enced headache, others have it so seldom they do not even so much as mention it in their medical histories.

Headache in frequency has only one competitor, constipation. Whatever its cause it may be regarded as a symptom of circulatory imbalance. It may be temporary, as in digestive upsets and mental excitement, or constant in conditions producing dural pressure. The determination of its etiology is frequently difficult, sometimes impossible. Headache occurring in individuals unaccustomed to the symptom requires immediate investigation. On the other hand the occasional one with varying intervening periods of good health lends itself to more detailed study.

Any headache of sufficient discomfort to cause a patient to consult his family physician deserves attention. A thorough study of the condition, and the emergency treated. Then a thorough medical history, and physical examination of all organs or groups of organs, with the aid of our best laboratory apparatus and methods.

After careful elimination, the causative factors may be collaborated and if consultation is needed, the patient may see the specialist and the diagnosis confirmed and his advice obtained. The main cause

having been reached, treatment is resumed.

The mechanism of headache is not easily explained because of difficulty in determining the site of pain.

Internal and external pain are mentioned in headache but no one has proof nor a clear explanation of the mechanics of headache. Osler does not attempt to discuss mechanism. However, headache is less common today than twenty-five years ago, because sedatives are more easily obtained, improved refraction methods, improved lighting facilities and ventilation, also better sleeping facilities and outdoor sports.

Classification of headache if needed should result from our interpretation of physiological and pathological study of medical inquiry as to:

*Family.* Nervous diseases and headache.

*Frequency.* Interval and regularity.

*Character.* Sharp, dull, or describe it.

*Location.* Eyes, forehead, occiput, temples, or vertex, whether deep or superficial.

*Intensity.* Mild or severe.

*Onset.* Day or night.

*Occupation.* Conditions of light and ventilation. Exposure to gas or lead.

*Habits.* Exercise and diet, tobacco, alcohol, and associated symptoms of the body.

#### ANATOMY OF HEADACHE

*Small Arteries of the Pia.* According to the work of Stohr the small arteries of the pia, before they pass into the capillaries, are immeshed in non-medullated nerve fibres, which end in a spiral course. Characteristic of the innervation of the arterioles is the appearance of very complicated endings which do not owe their origin to the nerves of the vessels, but in the nerves found free in connective tissue of the pia which then apply themselves to the walls of the pial vessels. These endings are to be found only in the pia of the cerebrum. The veins have the same innervation.

*Nerves of the Pia and Choroid Plexus.* In the pia and in the choroid plexus there is a large plexus of nerves which apparently have nothing to do with the blood vessel supply but which course along al-

together not physiologically independent of the blood vessels in the connective tissue. First of all, are those at the base of the brain. They are derived from the third, sixth, ninth, tenth, eleventh and twelfth cranial nerves. From the pons there come also to the pia fibres which go from the vagus nerves to the plexus of the fourth ventricle. They form a net, which is especially delicate in the pia of the optic nerve and end in arborization or in club-like swellings.

*Sympathetic Nerves of Central Nervous System.* The vessels of the pia, like all others are important from one aspect. The substance within the central nervous system is surrounded by sympathetic nerves to which are added parasympathetic nerves from the connective tissue. For the nerves of these vessels there is a separate, sensitive controlling mechanism which is especially well developed in the arterioles. These are extraordinarily rich in nerves. They appear therefore to be for the regulation of the circulation of the blood, especially since one has not been able until now to determine indisputably the existence of nerves in the vascular system. It therefore appears that the entire nervous control of the circulation of the blood within the central nervous system lies in the pia.

*Causes of Headache from Other Organs.* According to Potts the nerve supply of the meninges account for the frequency of headache accompanying disturbances of other organs. The supply of the falx tentorium, and anterior three-fourths of the dura is derived from the fifth nerve: the remaining fourth from the sensory fibers of the pneumogastric. The scalp as far back as the vertex supplied by the posterior branches of the upper fourth cervical nerves. The sensory or descending root of the fifth nerve is in close relation with the origin of the cervical nerves in the cord and also of the cranial nerves in the medulla. The regions of the dura, supplied respectively by the fifth and pneumogastric nerves, overlap. The viscera are also supplied in large part by the latter and in addition the pia receives branches from the third, fifth, sixth, seventh, ninth, tenth and eleventh cranial nerves.

#### PATHOLOGY OF HEADACHE

The actual changes within the cranial cavity have been difficult to observe and



most theories on the subject are conjectural.

Headache is a symptom and the pathology is that of the disease producing it.

In many of the infectious diseases, and headache is common with most of them, the headache is produced by pressure due to alterations in vasomotor tension. The same is true of the neurasthenic and digestive headaches.

In meningitis there is increased intracranial pressure with pain and relief is experienced after lumbar puncture.

Brain tumor may produce a general increase in intracranial tension with irritation or stretching of the dura.

Whether from inflammation of the meninges, pressure upon the dura or vasomotor change there is a circulatory imbalance which results in an alteration of tension.

#### CONSTITUTIONAL CAUSE OF HEADACHE

Anemia, due to debilitated state into which many people force themselves by poor environment, improper living, lack of exercise, poor hygienic treatment, may cause severe headache located in various sites over the head. Usually, forehead and vertex or forehead and temples, and sometimes over the entire head. Almost all anemics suffer from some type of head pain, usually due to the true causative factors of anemia such as:

*Hemorrhage.* Frontal, vertex or occiput, sometimes general, which is a dull headache, and pressing feeling.

In pernicious anemics—82% of the cases have no headache, others very slight.

In chlorosis—patient frequently complains of headache but may have migraine type of darting pain in temples behind the eyes, coming and going at intervals, appearing on exertion, with relief after rest.

*Polycythemia.* In this condition headache is the most common subjective symptom, being persistent and severe throughout the disease.

*Gout.* Gouty individuals are not considered to have headaches unless they are the typical American type which borders on neurasthenia.

*Diabetes.* Waltman states that headache and diabetes do not go together, others differ in opinion. Diabetics do not have migraine attacks as a rule.

*Syphilis.* Marshall calls attention to the great importance of the early recognition of the headache of syphilis as prompt treatment may save the patient from paralysis or mental breakdown. The intensity, persistence, and nocturnal exacerbations characterize the headache. According to Marshall, the pain is sometimes likened to a weight on the head, sometimes to compression of the head in a vise, at other times to blows on the head with a hammer. The intensity and long duration are of more importance in diagnosis, the attacks sometimes occurring for several years before the supervention of further cerebral trouble.

*Meningitis and Syphilitic Arteritis Cause Typical Headache.* While periorbitis and nerve pressure may give rise to headache, meningitis and syphilitic arteritis cause the typical headache described above. It is diffuse, intense, persistent, and worse at night. The uremic headache due to urinary insufficiency from syphilitic nephritis has not the characteristics of the true syphilitic headache.

In the secondary stage of syphilis, headache may be in active association with the eruption. It is apt to be occipital and to increase in intensity toward night. The greater part of the day may be comparatively free. The headache may radiate over the entire head or may be limited to one side of the occiput. The intensity shows great variability, from a mild discomfort to a racking headache which nearly crazes the victim.

*Headache in general paralysis.* This type of patient do not complain much of headache except in the early stage of the disorder when, however, the pain is variable but rarely intense.

The locations of syphilitic headache, which is usually dull in character may be bitemporal at the vertex, occipital, or frontal, the frequency of location corresponding to the order of enumeration.

In vascular neurosyphilis, headache is intermittent, often monosymptomatic, persistently recurrent, often but not always worse at night, dull and stupefying or acute, increased by mental effort and physical work.

In basilar meningitis, headache is usually severe, pain deep in the eyes, sensitive to percussion over the brows.

In meningitis of the convexity, headache is diffuse or localized, often boring,

frequently but not invariably, worse at night. Patient may seem deafened. This is often confined to the upper parietal area where there is very frequently circumscribed tenderness to pressure and percussion.

*Headache in Renal Diseases.* There is a general belief among physicians that most of the renal diseases causes headache. This idea pervades the laity and often brings the victim of headache to the physician because of a fear that the pain may be due to kidney disease. The relation of headache to hypertension bears a similar position: as in hypertension headache may be a prominent symptom, it may be mild, or entirely absent.

Osler said that headache is frequently an early evidence of acute nephritis, and in chronic nephritis the most frequent form of pain is headache. In the latter, the headache may come on insidiously but the attacks of pain grow more severe and more frequent. No one kind of headache is characteristic.

In acute nephritis, the early symptoms of headache, as the uremic intoxication increases gives rise to a distressing, almost unbearable headache. This is explained by the cerebral edema or (wet brain). Generalized headache or pressure headache is of this character.

In chronic nephritis, the toxic symptom of headache occurs during the hypertensive stage. This being a congestive condition. The pain is located in the occipital region, present on waking, wearing away after exercise. It is dull, generalized and persistent.

*Eclampsia.* In pregnancy, any headache should arouse our suspicions.

*Movable kidney.* We have headaches with other ill defined symptoms.

*Stone of kidney.* Mild headache only.

#### HEADACHE IN INFECTIOUS DISEASES

*Constant symptom during prodromal stage.* Headache is an almost constant symptom in the infectious diseases, especially during the onset or prodromal stage. Whether headache is present or not depends upon the nature of the onset as well as the disease for in some patients the characteristic subjective symptoms may be so masked by an overwhelming toxemia that they feel and remember little of the illness. In some, it is the outstanding feature of the onset: we say onset be-

cause headache is not a striking symptom in most infectious diseases after they have become well established.

The early symptoms of acute infectious diseases are so familiar: fever, headache, backache, muscle pains, lethargy, disturbances of the digestive tract, that an immediate diagnosis is often difficult: frequently impossible.

*Pneumonia.* At onset the usual features of fever and headache. Osler says that if the patient is seen shortly after the onset, he has the usual features of an acute fever and complains of headache and general pains.

*Influenza,* for example, is more frequently complicated by pneumonia than any other disease, and the prevalence of headache in influenza is well known. In those cases of pneumonia which suggest typhoid fever at the onset headache may be a prominent symptom. Furthermore, it is true of pneumonia as in most other infectious diseases, that if there is present any chronic condition (of the eyes, nasal sinuses, et cetera), headache would be aggravated by the circulatory changes produced by the fever and other characteristics of the onset of the infection. Obviously, if pneumonia occurred with a typical onset in a patient previously in perfect health, we could assume that the headache was a part of the symptom-complex.

*Typhoid Fever.* Headache is a very constant early symptom of typhoid fever. Often the patient has had headache for several days or even weeks, gradually becoming more severe, and has vomited several times. The headache at first is general, but later becomes frontal. In the second and third weeks, as the mental stupor increases, headache disappears, or at least the patient is no longer conscious of it.

*Typhus Fever.* Intense frontal headache and abrupt onset.

*Pyelitis.* Intermittent alternate, intense frontal headache with other symptoms.

*General Sepsis.* Intermittent type—variable headache.

*Focal Infection.* Gives an intense headache. Occipital.

*Acute Rheumatic Fever.* Usually causes severe occipital headache but when asso-



ciated with migraine and chorea we are liable to find paroxysmal headache of a different nature.

*Nodular Headaches (rheumatic).* Have severe and persistent occipital headaches sometimes involving the entire head. These do not cease at night and are usually more severe in the recumbent position.

*Cerebrospinal Fever.* Abrupt onset with severe headache. Its onset is very abrupt and except in those cases which are ushered in with delirium and loss of consciousness, severe headache generally accompanied by vomiting is the rule. Headache is often occipital, and is usually constant and agonizing.

*T. B. Meningitis.* After a prodromata headache may begin rather suddenly, with varying intensity. On the other hand, aseptic meningitis can come on with intense headache, sometimes frontal and sometimes occipital.

*Acute Poliomyelitis.* In this condition, headache is not so severe but is usually occipital.

*Lumbar Puncture* used in diagnosis may cause a delayed headache, usually frontal, maybe occipital. Throbbing type, which is aggravated by a sitting position.

*Epidemic Encephalitis.* Headache is not a striking symptom.

*In Scarlet Fever,* headache takes the part of any infectious diseases. Trench fever may have a splitting, severe headache.

*Malaria* gives us a reflex neuralgic pain severe and remittent in type diagnosed by blood examination. *Tetanus,* mild prodromal symptom of headache with back pain and muscle stiffness.

*Hypertension*—frequently a cause of headache associated with nephritis. In malignant or organic type excruciating dull headache intermittent or continuous, affecting the whole head, centering especially in the occiput. Worse in the morning, awaking the patient in the early hours and wearing away with increase of circulation after activity. When this occipital headache is refractory and intense it is ominous of the appearance of cerebral complications sooner or later. Finally, it may assume the form of ophthalmic migraine and remain an isolated phenomenon a long time and simulate complications such as aphasia, hemianopsia or transient paresis.

## HEADACHE IN CARDIAC DISEASE

*Evidence of circulatory imbalance.* Since headache is, in the majority of cases, an evidence of circulatory imbalance, it might be expected to occur in many of the forms of cardiac disease. On the contrary headache as a symptom in circulatory disorders is unusual. It may be said that it is less common than in most other conditions.

*Congestive Heart Failure and Arteriosclerosis.* There are two cardiac conditions where headache is commoner than any others: congestive heart failure and arteriosclerotic heart disease. In the former it occurs when there is venous stasis. Stasis was produced experimentally by Cushing, who increased the cerebral pressure by putting a cuff of a blood-pressure machine about the neck and filling it with air which interfered with normal circulation to the head. Arteriosclerotic heart disease may cause headache but it is frequently absent.

*Aortic Regurgitation.* Osler mentions headache in aortic regurgitation and mechanically it should occur. The throbbing vessels and often increased systolic pressure should be sufficient cause. It is surprising that headache is not more frequent. Since aortic regurgitation, especially when due to syphilis, is generally accompanied by more or less arterial sclerosis, headache might easily be due to the changes in the cerebral arteries. A forceful systole driving the blood stream into resistant arteries adds to the possibility of producing and increasing the symptom.

In compensated mitral stenosis it is not common and if it does occur is merely a part of the generally impaired health.

In any condition which would result in cerebral anemia, such as tachycardia, auricular fibrillation or flutter and myocardial fibrosis, headache might be expected but seldom occurs from any one of these causes alone.

## HEADACHE IN DISEASES OF THE DIGESTIVE SYSTEM

*Not an outstanding symptom.* Headache is not an outstanding symptom in disease of the digestive system. In the important ones, such as carcinoma and ulcer, headache does not occur so long as reasonable functioning power is maintained. When vomiting or obstinate constipation occurs in any of the major gastro-

enterological diseases, headache appears as it might from these symptoms when produced by benign disturbances.

Constipation is a very common cause of headache and should be investigated in every patient complaining of the symptom. It is often a dull frontal pain.

Indiscrete eating and food idiosyncrasies may cause headache. Eating when there is bodily fatigue may be a cause, especially in persons with hypertension.

Gastroenterologists are consulted by patients because of periodic attacks of headache and vomiting but these frequently belong to the migrainous class.

#### HEADACHE CAUSED BY DRUGS, CHEMICALS AND POISONS

(*Familiarity with toxicology necessary*). That certain drugs cause headache is too well known to dwell at great length upon the subject here. Text books upon toxicology and the action of drugs give excellent accounts with which the physician in general and hospital practice must be familiar. In private practice there is the occasional case but familiarity with the effects of drugs taken in poisonous doses may enable the practitioner by prompt action to save life.

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#### NEUROLOGICAL HEADACHE

NED R. SMITH, M. D.  
TULSA

I believe I can best contribute to this symposium by roughly indicating my procedure when confronted by a patient whose chief complaint is headache.

The first step is to make sure what the patient means by "headache." I ask for the location of the discomfort and make an attempt to have the patient describe the pain in his own language if possible. By this method I have learned that everything from hysterical clonus to smarting of the eyes or interscapular paraesthesia extending up to the base of the occiput may be called headache. Once the exact nature of the complaint is clearly defined, further history varies according to the trend indicated in any specific case. If the headache suggests migraine, family

history is carefully gone into, not necessarily for a history of migraine only, but for its equivalents as well. Factors that might provoke the attacks in the patient's diet, habits, or environment are considered. In females the age at time of onset of the headache, and any tendency to association with the periods is a most important point and at times will be the deciding differential factor in a diagnosis between headache of the migrainous type and that due to pituitary insufficiency during menstruation. However, there are certain migraines that are not thus linked up with the periods that will spontaneously cease with the menopause.

The neurological diagnostic possibilities in the ordinary headache are entirely too numerous to even enumerate. Brain tumor probably leads the list, especially if the patient be under twenty years of age. Throughout the middle age periods one still must consider brain tumor, but syphilis of the central nervous system is more likely to be present. In the later periods of life arterio-sclerosis requires serious consideration as the etiological factor, and not necessarily need be associated with hypertension. I believe the larger proportion of headaches are reflex in origin. The best reason for this belief outside of one's experience is evidenced by the angles from which the subject is being approached in this symposium. I have occasion to refer cases for glasses, pelvic corrections, etc.

I am thoroughly convinced we all must continue to regard headache purely as a symptom and not a disease entity. It is probably true that most of the headache that I see is of the functional type, occurring either as the sole symptom or as a component of some form of the psychoneuroses. I usually see these patients as referred, and unfortunately for the patient altogether too often after the experiment of glasses, sinus punctures, hysterectomy, etc., has been tried. This last remark is motivated solely by the strong belief that the most important thing for the maintenance of our profession in its historical and proper social position is for each of us to earnestly strive to be better physicians and raise our batting average for correct interpretations of the problems



that our patients present to us, and pay little or no attention to talk about state medicine, and unhappy conclusions of self-appointed busybodies about the cost of medical care.

If you do not believe in the reality of the psycho-neuroses, it would then be a waste of your time and mine to discuss headache from that standpoint. It can be demonstrated to any open-minded person that most any symptom a human being is capable of expressing may be on a psycho-neurotic basis. It therefore follows that in headache we many times give serious thought to this possible interpretation. If now in such a psycho-neurotic individual their attention has been fixed through the physician's diagnosis and therapeutic efforts upon some somatic region, the problem of the neuro-psychiatrist has been made doubly troublesome, because before he can attempt psychotherapy the patient must be convinced that their trouble is not organic or reflex; in other words, they must lose their fixation and start with a clean slate. I hasten to remark that astigmatism, colitis, or retro-flexed pelvic viscera can exist in a neurotic and that their correction is always indicated, but with some conservatism as to possible relief of definite coincidental psychoneurosis.

The diagnosis of a psycho-neurosis of any type should be made on a positive basis and not by exclusion. At times in the field of psycho-pathology, just as in other situations, the evidence may be unsatisfactory for a definite conclusion. There is where we employ team work to our mutual help and comfort. Just for example, in a suspected hysterical individual with visual complaints, I feel much more secure when the oculist returns a report showing tubular fields of vision and no eye pathology.

In short the neurologist endeavors to approach the problem of headache with a wholly open mind as to its etiology and underlying pathology. If after taking a careful history and making a thorough examination, there is lack of evidence for an organic basis; the personality of the patient, which is always under scrutiny in the office of a neuro-psychiatrist, must be taken into consideration. Regardless of who the physician may be, never lose your usefulness to your patient by suggesting their headache is imaginary, when in fact it is probably on a neurotic basis. It is still a headache to the patient.

## GYNECOLOGICAL HEADACHES

JOSEPH W. KELSO, M.D.  
OKLAHOMA CITY

I am sure that you men of this special section will not take issue to the statement that pelvic disturbances are very common causes for headaches and until the pathological condition originating in the pelvis is corrected, the patient will continue to complain of her symptom of headache. We will shamefully admit, that at one time when gynecology was new as a specialty, it was unwise for a woman complaining of headaches to seek aid, providing she had the least hope of conserving her pelvic organs. Fortunately this period has passed and gynecologists of today are very careful in offering a patient relief of this symptom from surgical intervention and then only after a diagnosis has been made through careful investigation and processes of elimination. The fact still remains, however, that women are being operated yet today for the relief of headaches *without proper study having been made*. Of course they return with their same headache which is often exaggerated and it is such surgery as this that wrecks the confidence of our patients but the specialty of gynecology will not accept these mistakes. They usually have been operated by the general surgeon.

There are two types of headaches referable to the pelvis which I wish to discuss in the short time allotted to this paper. First I want to call your attention to the headache associated with a malposition of the uterus. Each and every one of you men can readily recall women who a few years ago were active, pleasant and healthy but now after the birth of two or three babies or a severe pelvic infection are nervous, unreasonable and whose personalities have been completely reversed as the result of constant pelvic pain, backache and headache. I am sure you would not be surprised to find your special examination entirely negative and I feel quite confident you would encourage this woman that she should place herself under the care of a gynecologist. The most common location for this headache is the occipital region and is usually associated with pain downwards from the occipital protuberance in the cervical muscles, to about the level of the sixth cervical vertebrae. It may be a frontal headache, across the top of the head, a band

like constriction about the head or a complete generalized headache but the most common location for this type has its beginning about the occipital region. The exact explanation for these reflex headaches arising from such a distant organ has not been clearly established and in fact many reliable authorities deny the connection but to me there is no doubt that such does occur. We must not lose sight of the fact that it may be some hormone disturbance as a result of an abnormal circulation as well as an interference of nerve conduction or nerve relationship of the autonomic and sympathetic symptom in the pelvis. Whether such an assumption is correct or not, the fact still remains that these headaches develop after the occurrence of the pelvic pathology and that they can be relieved by the proper treatment. You will be surprised by the relief obtained for these women by the insertion of a well fitted pessary or a firm vaginal tampon and it is through these therapeutic tests that one is able to separate the headache of pelvic origin from that of neurasthesia. When deprived of the use of both of these measures, a hot douche followed by five minutes in the knee-chest position will often afford the patient relief and give her a good night's rest which she would not have been able to obtain otherwise. Such patient is a candidate for surgery and if the pelvic diaphragm is correctly reconstructed and the heavy malposed uterus suspended, she can almost be promised relief from her headache. Such headaches so closely resemble the headache of the neurasthenic that one must be very careful in arriving at a correct diagnosis before recommending surgery for their relief.

The other type of headache I wish to refer to in this paper is the periodic headache which occurs with regularity in the menstrual cycle. Very few women experience a feeling of well being during their menstruation and their physical and mental disturbances may be manifested in various ways. Headaches occurring at this time are common but the dreaded so-called premenstrual headache has an entirely different basis. Within the last few years it has been definitely established that the pituitary body is the driving force of the ovary and that such headaches are the result of an overworking gland which has become hyperemic or edematous in its attempt to maintain the proper endocrine balance that it gives the

patient a similar headache of a pituitary tumor. They usually arise just within or about one or both eyebrows and described as coming out through the temples and also through the top of the head. They are severe, incapacitating, often accompanied by vomiting, not relieved by ordinary headache remedies but disappear with the onset of the flow. There is considerable yet to come from the study of the female sex hormone but this seems to be a fairly well established fact. These headaches can frequently be relieved within an hour by a hypodermic injection of the substance of the anterior lobe of the pituitary gland, antuitrin. They can frequently be prevented by the administration of the female sex hormone in the form of theelin, progynon or amniotin for a week prior to the expected date for the headache. The antuitrin apparently supplies the body with the material that the pituitary gland is so courageously attempting to produce in sufficient quantities to assure the production of the optimum amount of stimulation to the ovaries and hence a normal period, while the latter relieves the pituitary body of the necessity for overwork as the blood stream has been supplied with the end result of the ovarian output. Again this calls for a very thorough study, close observation, careful co-operation and often a juggling of various hormones before the proper one is found that will give the desired relief. It is also on this same basis that we see the terrible headaches so often encountered in the woman nearing her menopause. With the climacteric the headache disappears because the pituitary gland no longer is called upon so vigorously. These headaches, likewise often yield to the proper endocrine therapy.

In closing I will warn you not to forget the toxic headache that may arise from inflammatory diseases of the adenexa which also may cause headaches by producing changes in the erectile tissue about the nose which is frequently experienced during menstruation. Even the slightest ulceration or polypoid formation of the endocervical tissue is often responsible for continuous headaches. But again allow me to remind you that the gynecologist has at his disposal several diagnostic tricks and therapeutic measures which permits him to fairly well establish a differential diagnosis of headaches of pelvic origin from those arising from other sources. Also that we are now able



to cope with many of these terrible bi-temporal pituitary headaches occurring at some definite time in the menstrual cycle and in all probability we will have more to offer for these women within the next few years.

## OPHTHALMOLOGICAL HEADACHE

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MUSKOGEE

It has long been known that the eyes are a frequent source of headache. So widespread is this knowledge, that the sufferer frequently makes his own probable diagnosis and applies directly to the oculist for relief.

Ocular headaches, may be classified under three heads: 1. Those caused by refractive errors. 2. Those caused by muscular imbalance. 3. Those due to inflammatory conditions of the eyes.

The first and second are frequently associated in the same case. In the third variety the underlying inflammation is the important thing. The headache is a secondary matter and disappears as the inflammation clears up. Its consideration does not properly belong here.

Ocular headaches are caused by fatigue of the ocular muscles and of the nervous apparatus supplying these muscles. The normal eye is so constructed that distant vision requires little effort on the part of either the intra or extra ocular muscles. Close vision requires muscular effort, but only of such a degree that the normal eye, sustains it for any reasonable time, without undue fatigue. Certain errors of refraction, however, add greatly to the load. Hyperopia requires accommodative effort to secure clear vision even at distance and this increased work must be added to the normal effort required in near work. Astigmatism excites a constant effort on the part of the ciliary muscle in the attempt to secure clear vision.

Functionally the two eyes are not independent organs but rather, are each a member of a delicately adjusted and highly complicated visual apparatus. In order to secure binocular vision each eye must be turned so that the image of the object viewed will fall exactly on the macula. This is accomplished by the extra ocular muscles, regulated in turn by the fusion faculty. Any failure of this complicated neuro-muscular apparatus to function

properly, results in diplopia. This is so intolerable to the normal individual that any possible innervational or muscular energy will be expended, in an effort to correct it. This excessive drain on muscular and nervous energy soon results in fatigue and it is this excessive effort that gives rise to headache.

The acts of accommodation and convergence are closely associated. A definite amount of accommodation is accompanied by a corresponding amount of convergence. More strictly speaking a definite amount of innervation to the muscles of accommodation is accompanied by a corresponding amount of innervation to the muscles concerned in convergence. One diopter of accommodation in normal eyes calls for one meter angle of convergence. Any anomaly of refraction or of the lateral muscles upsets this relationship and puts an extra burden on the nervous apparatus. If the eyes have a hyperopia of two diopters they will require for work at thirty-three centimeters, five diopters of accommodation, while the muscles of convergence will require only three meter angles. If the eyes are two diopters myopic they will require only one diopter of accommodation while three meter angles of convergence are required. As the tendency of the nervous system is to supply equal degrees of stimuli to the accommodation and to convergence, it is evident that there is a loss of balance between these two functions. Similarly if there is an anomaly in the strength of the lateral muscles or in their innervation, the relationship is disturbed. The effort to compensate for this imbalance produces abnormal fatigue.

The relationship between the vertical muscles and accommodation is not so close but since the duction power of these muscles is rather low, small amounts of imbalance are apt to produce marked headache.

In cases of eye strain headache, the history is usually very suggestive. The headache usually comes on after prolonged use of the eyes for near work, after a car ride, a picture show or some rather trying use of the eyes. It is seldom present on arising and seldom wakes the patient at night. The pain is usually located in the frontal and temporal regions but may involve any part of the head. Headache following use of the eyes need not necessarily be due to trouble in the eyes them-

selves. In frontal or ethmoid sinusitis, the bony attachment of the pulley for the superior oblique, is tender and the traction on this muscle will produce headache. Occasionally an attack of migraine is precipitated by the use of the eyes.

The diagnosis of ocular headache rests finally on the careful examination of the refraction and the muscle balance. The refraction should be done under cycloplegia in all patients who are not presbyopic and cycloplegia may be required in some of the younger presbyopes. Except possibly in the case of myopes, glasses should not be prescribed from the results of the static refraction alone. As in all other fields of medicine, the individual patient must be considered. One may have a vigorous ciliary muscle and a well balanced nervous system and will be most comfortable with a comparatively small part of the spherical correction. Another may accept or may require practically the full amount. For this reason the patient should be required to return after effects of the cycloplegic have disappeared, for a recheck of the refraction and determination of the muscle balance while wearing the new correction. In practically all cases the full cylindrical correction should be given and great care should be taken in determining the correct axis. The prescribing of spherical correction requires experience and judgment. As a rule full correction is given to myopes. In the hyperope, the amount will vary with the age of the patient, the stability of his nervous system and his ocular muscle balance. In young people in good health, the ciliary muscle will usually take care of a considerable degree of hyperopia with ease and comfort. In fact when it becomes necessary to force a near full correction on such a patient, it is often difficult to induce the ciliary muscle to relax sufficiently to obtain good vision. As the patient approaches presbyopia he requires and accepts more nearly the full correction. It is a common experience to find a patient who has been given the strongest sphere with which he can obtain clear vision, returning at intervals of a few months requiring stronger spheres until finally practically the full correction is worn. Occasionally a patient will be seen who accepts no more than half or two-thirds of his full spheric correction and who goes along comfortably for years with no addition.

The cases which are suffering from the

effects of muscular imbalance often are the most difficult to relieve. Hyperphoria is more apt to give trouble than are the lateral imbalances. The vertical muscles have small ducting power and little can be done by training. One or two diopters of hyperphoria can sometimes be borne without discomfort, but higher degrees often require the wearing of prisms. Fortunately prisms are usually well borne and afford relief in the vertical imbalances. It is seldom necessary to use full strength prisms. Usually a prism one or two diopters less than full strength worn base down over the hyperphoric eye or divided between the two eyes will give relief. It is however usually a mistake, except in cases of high degree, to give a prismatic correction until glasses minus the prism have been worn for a time. Many cases of hyperphoria as well as the lateral phorias, will disappear after the glasses are worn for a short time.

The presence of lateral phorias have an influence on the prescribing of spheres. Most of them are of the accommodative type and are markedly affected by the correction of the ametropia. Two or three diopters of esophoria are very common and seldom cause symptoms. Frequently much greater amounts are symptomless. Accommodative effort is accompanied by increased convergence, therefore the sphere should be the strongest that the patient can wear with comfort so that the necessity for accommodation will be reduced to a minimum. On the other hand in exophoria accommodation should not be held in abeyance. Plus spheres should be kept down in strength and in myopia full correction should be given.

A large percentage of the phorias will disappear when the refractive error is corrected. When they fail to do so prism and stereoscopic exercises may be tried. These frequently are of great benefit in cases of exophoria but of far less value in esophoria and hyperphoria. Prisms for constant wear are seldom of benefit in the lateral phorias but will occasionally give relief. The so-called essential types of phorias are a much more difficult subject. In these there may be some actual weakness or defect in the muscles but the trouble seems to be largely one of disturbed innervation. Medical treatment, muscle exercises and surgery are all resorted to in these cases, but the results are inferior to those obtained in the accommodative type. As stated before, headache due to



eye strain, is a symptom of muscular and nervous fatigue. The condition of the nervous system has a very important bearing on the production of such headaches. An individual with a well balanced nervous system can often use his eyes for long periods and in spite of a considerable refractive error suffer little or no inconvenience, while another of the neurotic type will suffer severely from an error of less magnitude. The type of refraction also plays an important part. Astigmatism, especially at an oblique or horizontal axis is much more prone to cause headache than is a spherical defect. High degrees of ametropia frequently fail to cause headache, because they are so great that no effort of accommodation can give clear vision and so no effort is made.

It is unquestionably true that many cases with slight errors of refraction are given glasses when none are needed, but it is also true that a few rare cases with an unstable nervous system are relieved by correcting a very small astigmatic or spherical error. Most of these cases show as great an amount of error without the cyclophagic as they do with it.

The oculist's duty to the headache patient is not ended when he has finished the refraction. A careful ophthalmoscopic examination should be made as a matter of course. Frequently an optic neuritis, a retinal exudate or some other intra-ocular lesion points to a systemic disease which as yet had produced no other symptoms sufficient to cause the patient to seek medical advice.

In cases in which no explanation of the headache is revealed by the refraction and examination of muscle balance, a check of the visual fields is worth while. A glaucoma in the prodromal stage will often cause headache and can be very easily overlooked. Occasionally the fields will show a defect which calls attention to a brain abscess or a brain tumor which had given little or no symptoms but headache. If the ophthalmologist will keep in mind the fact that in a certain number of cases the eyes play no part in the causation of the headache but do present lesions which indicate its origin, he can greatly extend his usefulness to the patient and his physician.

## HEADACHE OF NASAL ORIGIN

WM. ORLANDO, SMITH, M.D., M. Sc.  
TULSA

Headaches arising from nasal pathology should be subject to very exact diagnosis. Often too much clinical evidence is taken into account on insufficient findings which makes this field subject to many errors in diagnosis, perhaps more so than any other branch to be discussed at this symposium.

The patients stress symptoms relative to their nose and the word "sinus" has become so common among the laymen and is usually so badly dreaded that people with headaches are very easily convinced that this is their trouble when the general practitioner or the uninformed nose and throat doctor agrees with them. There is no reason why this should not be a dreaded disease, because each person with whom you talk about sinus trouble has a friend who has had numerous operations with no relief and a return of more severe headaches.

I am going to give you hurriedly my observations and views on the ordinary conditions of the nasal architecture, then dwell more at length on nasal neuritis.

As to headaches arising from deformities of the nasal septum, I am certain that this is a rare phenomenon. Extreme deformities might tend to cause considerable aggravation during an acute process of the ethmoids by preventing proper ventilation and stagnating secretions, contributing factors in the causation of headaches. Ordinarily, however, they have no significance whatsoever except for symptoms of nasal obstruction, and I am seriously doubtful of the frequency of this.

The anterior group of sinuses is not the seat for headaches with the exception of the acute suppurative processes where the periosteum is involved. Headaches occur in this group of sinuses when acute exacerbations of a chronic condition is manifest. I do not believe there is a vacuum sinus headache except perhaps in very rare incidences.

The posterior ethmoids and sphenoid are the most common agents of headaches in the sinus group because the acute processes do not tend to resolve themselves readily by reason of their poor natural ventilation and drainage. Infection tends

to involve the mucosa, which subject it rather frequently to acute exacerbations. Here, again, all other causes for the headache should be ruled out first and then the sinus confirmed with properly taken X-ray pictures. Headache, here, is usually referred to the occipital region, between the eyes in the midline, and behind the eyeball on the infected side.

Allow me to again clarify my views in a short summary on sinus headaches. I fully realize that an acute infection of any sinus can cause a headache as well as the exacerbations of chronic conditions. These conditions are easily diagnosed; the headaches we are interested in are the more obscure ones.

The term headache to most people is a pain in any region of the head, whether it be frontal, occipital, temporal, parietal, or general; whether it be a sharp, dull aching or throbbing, inside or outside the cranium.

The headaches that are of nasal origin, except as above outlined, are extracranial, which fall under the general heading of neuritis.

First I like to consider the nerves of the nose as a whole. The nasal mucosa is very rich in sensory nerve endings, so rich in fact that we are often led to believe that it is the seat of trigger areas which transmit reflex sensations and pains to different places in the head. Sluder (in 1917), described a headache syndrome which consisted of pain behind the root of the nose, in the eyes, over the side of the face and cheek bone, often radiating to the back of the head and down the occiput to the back of the neck and occasionally to the shoulders and even lower; this he described as *néuralgia* of the sphenopalatine ganglion. Occurring with this syndrome, he often found exaggerated nasal pathology in the posterior sinuses and reasoned that the pain was a neuritis of sphenopalatine ganglion which occupies the upper part of the pterygo-palatine fossa. It is a small reddish gray ganglion suspended from the maxillary nerve by the two sphenopalatine branches which constitute its sensory roots. The motor and sympathetic roots of the ganglion are derived from the nerve of the pterygoid canal. The branches from the ganglion are seven in number: the pharyngeal, the three palatine, the posterior, superior, and the lateral nasal branch, the naso-palatine nerve and the Rami orbi-

tales with two or three sensory roots which pass directly from the lower border of the maxillary nerve to the upper border of the ganglion. These fibers for the greater part are dendrites of the cells of the gasserian ganglion.

The great deep petrosal nerve represents the association cord between the superior cervical sympathetic and nasal ganglion. Many of its fibers end in arborizations around the stillate nasal ganglion cells from which, in turn, axones pass to blood-vessels by way of the ganglionic branches of distribution. The ganglion lies in the sphenomaxillary fossa, close to the sphenopalatine foramen, and embedded in the mucosa of this region two to seven millimeters.

I have given a short, anatomical resume of the ganglion to clarify some of its phenomena.

Most authors would lead us to believe this type of headache to be very typical in its occurrence. First occurs coryza of some type, later on comes pain at the root of the nose, in and about the eye, the upper jaw and teeth, extending backward to the temple and about the zygoma to the ear; then backward the pain pushes its way to the occiput and neck, even to the shoulder blade and shoulder and may, in severe cases, go to the arm, forearm, hand, and even the fingertips. It has been my experience seldom to see a case with all these manifestations; my records reveal only nine. There is usually only one or two areas involved, the most frequent sites being the temporal and extending behind the mastoid; this is true in fifty-three cases. Pain in the root of the nose and eye region was found in nineteen cases, the occiput and neck region in forty-four cases, in the neck alone eighteen cases, the mastoid alone in eleven cases, the temporal alone in fourteen cases. Any patient complaining of his teeth and jaws paining considerably was found to have some form of sinus disease. Pain involving the mastoid and occiput seemed the most severe and the occipital type the most difficult to relieve. Most all cases show some low grade chronic infection in the sinus or throat, the sinus involvement being the most frequent in the posterior group of cells and not sufficient to call for any radical treatment and the symptoms are readily relieved by local measures.

The manner in which this pain occurs



in isolated areas has led me to assume that in the large majority of cases the entire ganglion is not involved, but only portions of its trunk which give certain sensory supply over the head and neck.

It is my belief that this is one phase of headache which is often treated as if it were of some other type and from some other cause. It is one of the most severe headaches people experience and it does not respond well to the usual headache remedies and lasts over a period of weeks and months, if not relieved as it should be.

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## HEADACHE FROM THE STAND- POINT OF THE OTOLOGIST

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ENID

In taking up the subject assigned to me in this symposium, I judge it was the intent of the chairman that it should not deal with an ordinary earache, from whatever cause but rather to the more generalized head pain resulting from an acute or chronic ear infection. If so, one must presuppose a middle ear infection, either acute or chronic, spreading or being transmitted to some adjacent tissue or structure causing a headache, that must be differentiated from one caused by infection or disease in some other portion of the head or body.

The time allowed for this paper will not permit a detailed discussion of all complications of ear infections causing headache but rather the most common ones in the order of their frequency as I interpret them, with enough symptoms and findings given for the purpose of diagnosis.

### MASTOIDITIS

1. Any case of purulent otitis media may result in an infection of the mastoid, should pain develop in an infected middle ear that is draining freely, a mastoid involvement should be suspected and a thorough examination for swelling, tenderness over the mastoid, differential, white cell count and X-ray should be made.

In adults the mastoid may be extensively involved without oedema or tenderness over same but show extensive cloudiness of cells when X-rayed.

The pain or headache of the average

typical mastoiditis when not draining freely, is usually described by the patient as throbbing or pounding, behind the ear in most cases but sometimes over a wider area, around the ear and side of head.

2. Suppurative labyrinthitis is always secondary to an infection elsewhere in the body, usually within the middle ear, the spread of infection from the tympanum may occur by one of several routes.

- a. By erosion of bone at some point causing a labyrinthian fistula.
- b. By extension of the inflammatory process by way of minute anastomotic vessels without the production of a demonstrable fistula.
- c. Trauma during a radical mastoid operation in which the stapes was injured.

Of conditions within the middle ear causing invasion of the labyrinth, probably all writers agree that the presence of a cholesteatoma is the most potent factor.

Jansen some years ago reported a series of 121 cases of suppurative labyrinthitis in which cholesteatoma was the apparent cause in 71 cases. While either an acute or chronic suppurative otitis media may cause a labyrinthian infection, by far the greater number of cases result from the chronic form.

According to Hinsberg and Von Stein suppurative labyrinthitis results in about two percent of suppurative middle ear infections and that it is their belief that infection of the labyrinth is a more frequent complication of tympanic suppuration than a sinus thrombosis, meningitis and brain abscess combined and that a very large percent of all cases of meningitis and brain abscess following middle ear disease are in reality secondary to an intermediate suppurative process involving the labyrinth.

The early symptoms indicating a labyrinthian involvement are vertigo, loss of hearing, nausea, vomiting, nystagmus, ataxia a deep seated earache and pain in the vertex or occipital area.

3. Extradural abscess is the most common of all the otitic inflammations of the meninges. It occurs at all ages and is found as a complication of both acute and chronic middle ear and mastoid suppurations but Jansen finds it more often associated with acute than with chronic sup-

purations, however, it is frequently found in a chronic otitis, with accompanying sclerosis of mastoid, resulting in necrosis of roof of the attic of middle ear.

In the coalescence type of acute mastoiditis a pressure necrosis will cause destruction of the tegmen with formation of abscess.

In the acute hemorrhagic mastoiditis the infection may be transmitted through veins and thrombus formation which breaks down forming abscess. These extradural abscesses are usually accompanied by increasing temperature and severe headache of a pounding nature.

A localized meningitis may develop during or following a mastoiditis and a small or following a mastoiditis and small extradural abscess, manifested by sixth nerve or abductor paralysis accompanied by inflammation of gasserian ganglion, known as the "gradenigo syndrome," the dura over the petrous pyramid in the seat of an inflammation involving Dorello's canal which transmits the sixth cranial nerve.

The diagnosis presents no difficulty, due to paralysis of external rectus muscle, double vision, severe pain over distribution of the fifth nerve, and increased spinal fluid pressure, which is clear and sterile for bacteria.

4. General meningitis of otitic origin manifests itself systemically by high temperature, prostration, anorexia, extreme restlessness, profound sepsis and severe headache.

Local manifestations are rigidity of neck and spine, positive Kernig and Babinski, and ankle clonus. The spinal fluid is usually increased in pressure, cloudy, increased cell count with the presence of bacteria.

5. Otitic brain abscess is secondary to an acute coalescent mastoiditis or diffuse suppurative labyrinthitis by erosion of the inner plate with direct extension of infection and formation of an intercranial pus pocket or metastatic by an infected thrombus from an acute hemorrhagic mastoiditis which is transmitted through mastoid veins or capillaries to brain.

Neuman's statistics show that aural suppuration associated with cholesteatoma furnish the largest percentage of cerebellar abscesses.

The early general symptoms are severe headache, chills, vomiting, subnormal

temperature and evidence of a protective meningitis in spinal fluid. Eggleston states that the finding of a more or less constant subnormal temperature is definite evidence of a brain abscess.

Symptoms of increased intercranial pressure due to extension of abscess are slowing of pulse rate, projectile vomiting, increase in blood pressure, ocular muscle palsies, coma and papilloedema; the latter is more apt to be present in abscess of the cerebellum, causing increased pressure by closure of foramina in the fourth ventricle than in tempora sphenoidal lobe abscess.

*Conclusion*—That headache is a symptom that is present in most all complication of otitic infections.

That headache alone is not diagnostic of any of the complications of middle ear disease but the location and type of same, taken in consideration with the history, X-ray, blood and spinal fluid finding, subjective and objective signs and symptoms, should aid in the diagnosis.

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#### PATHOLOGIC BASIS OF SYMPTOMS IN NEPHRITIS

J. P. Simonds, Chicago (Journal A. M. A., March 5, 1932), differentiates two type of nephritis: (1) that in which the essential damage is to the secretory portion of the kidneys, and (2) that in which the smaller arteries and arterioles are characteristically involved. This second type is not so much a primary disease of the kidneys as a generalized disease of the arterioles of the body. The basic changes in the first type are degenerative and exudative (inflammatory) resulting in increased permeability of the renal filter without retention of nitrogenous products but with loss of albumin in the urine, depletion of blood serum albumin, retention of crystalloids in the tissues and edema. In the second type the fundamental pathologic change is a hyperplastic sclerosis of the smaller renal arteries and arterioles with narrowing of their lumens, (1) reducing blood pressure and blood flow in the glomeruli below that required for adequate filtration and (2) interfering with the nutrition and therefore with the function, of the tubules, thus causing retention of nitrogenous waste products. More elaborate classifications are confusing because they attempt to make separate entities and types out of (1) different stages of the same morbid process or (2) different combinations of the same fundamental unit pathologic lesions. The author believes that if due recognition is given to the fact that nephritis is a progressive disease, it is possible, by means of this simple classification, to make a reasonably satisfactory correlation between its clinical manifestations and their pathologic basis, and to elaborate the principals of rational treatment.



## VENOUS PRESSURE AND ITS CLINICAL SIGNIFICANCE\*

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From the time of Harvey's study of the circulation of the blood in 1628, and the investigations made by the clergyman, Stephen Hale, on the blood pressure changes in the crural artery of a mare, as well as the venous pressure changes in the jugular vein, the subject of venous pressure itself has been only of academic interest to the greater number of clinicians. Its applicability in every day practice has not been given a fair trial. This evening I shall attempt to emphasize the importance of venous pressure readings in diagnostic medicine.

The growing interest in venous blood pressure arises from the new conception of its relation to cardiac activity, and an appreciation of the clinical significance of such a relationship. As a brief resume for clarity, the general principles involved in the circulation of the blood are repeated here as follows:

1. On cardiac systole the pressure of the blood in the arterial bed is elevated.

2. The degree of this elevation is determined by the energy of cardiac contraction, the volume and quality of the blood expelled and the peripheral resistance.

3. The systolic elevation of blood pressure is most felt in the aorta and decreases as the periphery is approached.

4. The elasticity of the arterial wall serves not only to accommodate for the increased blood volume of systole, but also through the inherent property of recoil to maintain a certain head of pressure during the resting period of the heart.

5. The fall of the pressure in the vascular bed is greatest in the arterioles, capillaries, and venules, giving rise to the loose term of peripheral resistance as an explanation of this phenomenon.

6. The marked widening of the capillary bed accounts for the dispersion of the arterial pressure in a considerable measure, hence the blood is delivered to the vein under a low pressure.

7. The pumping action of muscular con-

traction effectively raises the pressure of blood in the veins.

8. The movement of the blood back to the heart is further favored by the increased negative pressure in the pleural cavity on inspiration.

9. The intra-thoracic venous pressure is slightly negative by reason of the influence of the inspiratory act on the flow of blood in the vena cava.

10. A minor share in this direction results from the traction upon the auricular wall by the descent of the ventricular base.

11. The tone of the vein is under the control of the veno motor nerves and the carbon dioxide content of the blood likewise exerts a direct influence on their walls.

Starling states that the energy of the cardiac contraction is determined by the initial load. In the heart the initial load or the degree of diastolic filling is measured by the venous pressure. Within certain limits, the greater the initial load, the more active will be the cardiac contraction. It is very doubtful whether this limit of myocardial reserve is ever exceeded in the normal individual, but the range of physiological response in myocardial disease will be decidedly narrowed.

From a clinical standpoint, therefore, venous pressure determination comes to occupy an unusual place in establishing the myocardial integrity. It is possible by such studies to establish directly the circulatory load on the right heart, and its ability to respond to same. A failing right heart will reflect its inefficiency in a rising venous pressure in the systemic veins. At present no clinical method is available to determine the pressure in the pulmonary veins. As a rule, the right heart ultimately bears the load for the left sided lesion. This usually occurs in all mitral lesions and in aortic lesions after the mitral valve becomes relatively incompetent. Therefore, indirectly, venous pressure readings in the systemic veins may reflect the condition of the left heart.

Now let us turn to the methods employed in the determination of venous pressure. There are two methods, the direct and the indirect methods. The results in both instances are comparable. In the direct method, determinations are made by introduction of a needle into the veins. In the indirect method the principle is the

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occlusion of the vein by external pressure. The indirect technic will be discussed first. The principle—the exertion of sufficient pressure to collapse the vein. In effect, the vein represents a manometric tube connected with the right auricle and collapse of the vein occurs at the level where the negative hydrostatic pressure equals the positive venous pressure. The apparatus used today is the modified Hooker-Eyster instrument. The essential features are: (1) a manometer calibrated in centimeters; (2) a specially constructed metallic capsule with a glass cover. This metallic capsule has opposing concave edges. A piece of rubber dam is drawn tightly over same. A small hole is cut in the rubber dam through which the vein under study may be observed. Water is the fluid medium used in the manometer. By means of a “Y” or “T” connection and a rubber tubing, a rubber bulb is connected to the manometer and to the capsule. Glycerine is used to seal the capsule to the skin over the vein under observation. A pressure on the rubber bulb elevates the pressure in the capsule and at the same time modifies the height of the column of water in the manometer.

The following standards are employed:

- (1) The patient is placed in a recumbent position.
- (2) Veins to be examined on the back of the wrist or right forearm must be on a level with the right auricle. The mid axillary line is used in recumbency.
- (3) The veins should be of moderate size.
- (4) The collapse of the vein is usually quite definite. Too protracted local pressure should not be applied as this may result in stasis. Difficulty in readings may be encountered in edema of extremities, unusual obesities, very small accessible veins, or phlebo-sclerosis. In these cases there is the direct method of venous pressure readings. In hundreds of determinations, no instance of venous pressure exceeding eleven centimeters of water has been found in the recumbent normal individual. The average in the normal recumbent is four to six centimeters of water.

Some of the factors which influence venous pressure are:

1. An increase in carbon dioxide in respired air, increases the venous pressure.

2. The hydrostatic effect of position is more felt in the veins than in any other portion of the vascular system. The ven-

ous pressure must be elevated in dependent parts sufficiently to overcome this factor.

3. There are lower readings of venous pressure in normal women than in normal men.

4. Venous pressure rises during the day and falls with rest in bed.

5. The readings are higher in the upright position.

6. The size or prominence of the peripheral vein has no bearing on the pressure.

7. The level of the venous pressure is entirely independent of the arterial blood pressure.

Now with this brief resume of venous pressure in the normal subject, let us look upon its application in the presence of clinical pathology. The limit of the ability of the myocardium to respond to increased initial load (venous pressure) by increased activity is distinctly narrowed by diseases affecting the heart muscle. The result of exceeding the ability of the myocardium to so respond is readily foreseen. As in the case of an overloaded voluntary muscle, the heart contracts likewise more and more ineffectively. Blood remains in the heart chambers after systole and tends to dam back in the large venous trunks. The venous pressure mounts further and the vicious cycle is complete. Ultimately the picture of congestive heart failure supervenes. The initial level of venous pressure as established by Clark in 1915, relative to cardiac decompensation, is equivalent to twenty centimeters of water. This standard has withstood clinical scrutiny. A venous pressure above twenty centimeters is indicative of a very poor immediate prognosis. Compensation is restricted in such a case. When the peripheral demand for increased blood supply has dropped to an irreducible minimum and the myocardium has from whatever cause begun to contract more and more effectively. Clearly in such a case the first indication is to bring about as complete muscular quiet as possible to reduce the demand of heart activity on one hand, and to decrease the return flow of blood to the heart on the other hand. Diet and digitalis are sheet anchors in this circumstance, but the most neglected procedure is venesection. The removal of 500 c.c. of blood in such a case is often the life-saving step, and venous pressure determinations constitute not only the guide



to this necessity, but also a valuable indication as to its efficiency. The venous pressure will invariably fall from its high level above twenty centimeters of water to between twelve and fifteen centimeters on venesection of 500 c.c. on individuals suffering from cardiac decompensation. If there be a myocardial reserve to respond to the lessened load, by more complete contractions this lowered venous pressure will be maintained or fall to a still lower level. If the ability of the heart to so respond no longer exists then the venous pressure will, after the early fall, steadily mount to or above its previous high level. No repetition of the blood letting in an unfavorably reacting case will affect a good response; but should a case previously reacting well to venesection again show signs of heart failure, the procedure may be repeated with favorable results. As compensation is regained either spontaneously or under treatment, the venous pressure falls. Importantly, the well compensated cardiac case shows no elevated venous pressure.

Venous pressure readings in the administration of anesthetics plays a very important part. In the first stage of anesthesia there is an increase in venous pressure. There is a still further rise in the second stage. Obviously the high levels of venous pressures of 26 to 34 c.m. of water induced by the circumstances of general anesthesia, evidence serious load on the right heart. These results may explain certain cases of cardiac failure under anesthesia. A valuable aid is routine venous pressure determinations in cases requiring general anesthetics.

*Conclusions:* In closing may I repeat the following pertinent points. (1) Venous pressure determinations reflect the right heart load. (2) Venous hypertension means myocardial failure. (3) A critical level reading of 20 c.m. of water is a guide to venesection to combat right heart failure. (4) Venous pressure readings are of value in the administration of general anesthetics. (5) Venous pressure is lower in females than in males. (6) There is a rise during waking hours and a lowering during sleep. (7) It is influenced by posture. (8) The normal average V.P. pressure is 4 to 6 c.m.

## SARCOMA OF THE ORBIT\*

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Senn says, "A tumor is a localized increase of tissue, the product of tissue proliferation of embryonic cells, of congenital or post-natal origin, produced independently of microbic causes."

Since congenital anomalies, inflammation, injuries and tumors may be found in the orbit and although the incidence of malignant tumors of the orbit is small, nevertheless, we do find them. I will not take up in this paper inflammatory or cystic tumors, but will confine it entirely to sarcomas. Malignant tumors grow rapidly. Infiltrate other tissues, are unlimited in their boundaries and are practically always immobile. Malignant tumors produce metastasis which indicates infection and tend to recur, even after removal. We also find in the case of malignancy, involvement of the lymph glands, at first those draining the part involved, later the entire glandular system is involved.

There are several varieties of sarcoma of the orbit. These are fibro, myxo, cysto, osteo, cylindroma, and melano sarcoma.

Sarcoma of the orbit is certain death for the individual except in very rare instances. It is the most malignant of all tumors of the orbit. The individual embryonal cells may be round or spindle shaped. Statistics show that the incidence of sarcoma of the orbit has been estimated from one in ten thousand to one in fifteen thousand cases, although the majority of writers claim that one in ten thousand would come nearer being correct. The young individual is pre-disposed to sarcoma of the orbit. Sex plays no part, neither does the question of trauma, although, in one case of melano sarcoma of the orbit I operated in 1916, there was a definite history of trauma. In this case of sarcoma just mentioned the tumor mass was attached to the posterior bony wall and was independent of the globe. After sixteen years this youngster has had no recurrence and there has been no interference at any time with his vision.

In the case of sarcoma of the orbit it is thought that the majority of them arise from the orbital fat, although, the capsule and supraorbital connective tissue may be

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the starting point of the sarcoma. Too, a sarcoma may arise with the choroid or the sclera and involve the orbit.

While it is claimed by authorities that youth pre-disposes to sarcoma of the orbit you will probably remember that at the meeting of this Society in Atoka, on December 12, 1928, I reported a case of lymphosarcoma which report was published in the Oklahoma State Medical Association Journal of January, 1929. This case was a man 64 years of age. Although in this case the primary seat of his sarcoma was not located it is as good a guess to say that it originated in the orbit as to locate its origin in any other part of the body. In the case of this old man the orbital contents on the right side was protruding from the cavity and was about the size of a tennis ball, the left slightly smaller. At the time I saw him general sarcomatosis was present as manifested by generalized lymphatic gland involvement, although his trouble apparently started only about eighteen months before he came to me. This man died in about four months after I first saw him.

*Examination:* It is not hard to diagnose a tumor of the orbit or its location, but only the microscope will determine the type of tumor found.

*Treatment:* The treatment of tumor of the orbit depends upon the type of tumor found. In the case of sarcoma there is the operative followed by radium or X-ray or both radium and X-ray alone.

In the case of the child I am reporting in this paper, its life might possibly have been prolonged a short while had I done a complete exenteration of the orbit at the time of the operation and had it had X-rayed afterwards. It did not receive X-ray due to reasons over which I had no control whatsoever. I do not think (and this is shared by many good men) that X-ray would have done anything more than have prolonged the life of the child. It most assuredly would not have cured it.

#### CASE REPORT

B. L. F. Female. Age 2. I first saw this child January 22, 1932. Family history: Father 53, good health; mother 34, good health. No brothers and no sisters. The mother gives the following history: She is the mother of five children. The two oldest children, two boys, are 19 and 17 years of age, by the first husband; then twins, both girls, nine years of age,

by the second husband; and baby two years of age, by third husband. The two oldest children, the boys, have had no trouble with their eyes at all. One of the twins has had no trouble; the other twin has a congenital cataract of the left eye. The baby has a condition of the right eye wherein the lens seems to be absent, but the pupil is enlarged and there is a dense yellowish white membrane deep in the eye, which may or may not be the capsule of the lens. The eye of the baby is very, very hard, and waters almost continuously. She keeps the eye more or less closed and the last few days has been complaining of light hurting. There is no maternal family history of defective eyes. The family history of the two fathers, second and third, is negative for any complaints of any kind. History of one miscarriage, between the two boys, at about four months. No other history of miscarriage or abortion.

Upon examination of this child's eye on January 22, I found the eye was extremely red and very hard. It was extremely difficult to examine the child, but it was apparent that there was a generalized inflammation and the mother was told to bring the child to the hospital. On January 23, the child was examined in the hospital, at which time it was seen when the eye was turned upward and the lower lid pulled down that a mass came up from beneath the eye. This mass was apparently the size of a Concord grape. Under general anesthetic the examination of the eye showed apparently no lens, and the first membrane or tissue seen in the pupil of the eye is apparently very, very deep, and is of a greenish cast. The tumor mass is inferior to the globe, the globe being larger than normal and extremely hard. The eye was enucleated with difficulty because of the adhesions and the tumor mass. The eye was enucleated under ether, the time required being thirty minutes.

*Operative Record:* Gross findings: There is attached to the inferior and posterior border of the globe a tumor mass about one and one-fourth inches long by seven-eighths inch wide and one-half inch thick. This mass is attached in its entirety to the globe. When the globe was lifted from the orbital cavity the entire orbital contents extruded between the lids and it was with difficulty that the contents were replaced in the orbital cavity. A pressure dressing was applied.

*Pathological Report:* Lattimore Labora-



tories. January 27, 1932. Clinical diagnosis: Grossly this specimen consists of an eye, showing a tumor, about 15 mm. in diameter, just posterior to the eye ball, yet attached. Sections from this specimen presents some very atypical changes. The cells for the most part are a fairly uniform round cell, presenting nuclei of varying sizes, hyperchromatic in staining, the picture of a lympho-sarcoma. Yet in other places we find giant cells, which I have never found in a lympho-sarcoma. The blood supply is increased. I feel sure this is a malignant condition, one likely of embryonal origin and one of connective. The exact classification is very difficult, that is, the subdivision beyond it being a sarcoma. In my opinion, however, it falls in the classification of a round cell sarcoma.

*Microscopical Diagnosis:* Round cell sarcoma. Signed, J. L. Lattimore, M.D., Pathologist. Examination of the urine was negative.

*Progress Notes:* January 25—Dressing changed. Very little trauma. Some protrusion of orbital contents. Baby in good condition.

January 26 — Dressing changed. Apparently no infection. Eye clean and only small amount of orbital tissue protruding between the lids. The patient is allowed to go home to come to my office for dressings.

January 27 — Follow-up: Dressing changed. Small amount of orbital contents still protruding between the lids. There is a small amount of hemorrhagic exudate under the skin below the lower lid and toward the nose.

January 30—No change over condition as of the 27th, except that the evidence of trauma has disappeared.

February 2—The contents of the orbit have receded and do not now protrude between the lids. The patient does not complain of any pain and seems to be getting along well.

February 4—Patient continues to improve. The wound has apparently healed and there has not been at any time any discharge. There are no enlarged cervical glands.

March 24—There is present two enlarged lymph glands, one located about two and one-half inches above and slightly posterior to right orbital cavity, it being about one inch long by five-eighths inch

wide. The other gland is in the posterior scalp about two inches to the left of theinion and is about the same size as that over the frontal bone. There has never been any temperature.

I did not again see this child, but was told by neighbors and the physician treating it that it got progressively worse and that toward the last it was necessary to keep it under deodorized tincture of opium, 8 to 10 drops repeated often, for its pain.

The lymph glands all over its body became involved until at its death the neck was swollen as large as its head.

For about a month before its death it was able to take liquids only, and that with difficulty, and at its death its oral cavity was reduced to nothing more than a narrow tube.

The frontal bone and superior maxilla, from the accounts I get, were destroyed. The left eye was bulging from the orbital cavity and the child was blind for quite awhile before its death.

There is one peculiar thing about the deaths from sarcoma of the orbit, they all retain their mental faculties to the end, showing the brain is not invaded or involved by the sarcoma.

The child died the 8th of May, 1932, about three and a half months after operation.

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#### SELECTIVE COLLAPSE OF LUNG WITH PHRENICOTOMY COMPARABLE TO THAT WITH PNEUMOTHORAX

C. M. Van Allen, Peiping, China (Journal A. A. M., July 2, 1932), calls attention to the fact that when a few hundred cubic centimeters of air is injected into the pleural space of persons with tuberculosis of one lung lobe, the slack given by the air to the elastic pull of the hemi-lung is frequently taken up more by the diseased than by the normal lobes, with the result that the air resides principally over the diseased lobe and collapses it selectively. He refers to the occurrence of selective collapse of the lung in pulmonary tuberculosis after phrenicotomy and compares it in principle to selective collapse after pneumothorax. For both operations, differentiation is made between the deflation of the diseased tissues which occurs immediately and is probably due to increased elastic tone of the lung, and that which occurs gradually and is due to formation and contraction of scar tissue. The author believes that the increased elastic tension of the lung, in the first type, is due largely to thickening of the pulmonary septums and membranes from vascular congestion and interstitial deposit of inflammatory fluids and cells.

## ARE ALL PULPLESS TEETH A MENACE TO THE HEALTH OF THE PATIENT?

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Some time ago, I had the privilege and pleasure of attending a most interesting and educational meeting of the Muskogee County Medical Society. At this meeting I listened to a splendid paper, rendered by one of my colleagues, on the subject of the "Pulpless Tooth," and it brought forth such enthusiastic response, and I would say, almost a unanimous condemnation of the pulpless tooth, by the physicians present, that I decided to carry on with this subject. My decision became final when I saw so many hands raised in answer to your Secretary's question, "How many of you doctors here have dead teeth in your mouths?"

However, gentlemen, I want to give you a different phaze of the pulpless tooth; I want to attempt to defend what I would call the well-cared-for and importantly located pulpless tooth, the pulpless tooth that is so often inaccurately called the dead tooth, the pulpless tooth that due to circumstantial evidence and inadequate diagnosis is placed into the general classification of all pulpless teeth and indiscriminately sacrificed by extraction. Dentistry, like medicine, is not an exact science; there are no set rules and regulations that will govern the workings of nature, man's worst enemy at times, and then at other times his best friend. I hope I am successful in making it clear to you, and I say this in all sincerity and freedom from pretense, that there is a happy medium between the two opposing groups: the one that believes the removal of all pulpless teeth a cure-all for every type of ailment, and the other that can see no possible benefit derived from its consideration, from a deeper study of the subject, from an attempt to place into practice the broader developments that have been disclosed; all toward a more rational solution. I ask the question, "Are all pulpless teeth a menace to the health of the patient?" A most arbitrary subject and one known as the dilemma of dentistry.

It is true that for twenty years or more, much attention has been centered on dental infection, much literature has been written, and much discussion has taken

place; and still the pulpless tooth remains in a most unsatisfactory condition, almost an unsolved problem, and so often, I would say regardless of its innocence, the victim of suggestive and auto-suggestive influences. This unsatisfactory condition, gentlemen, is not due to a lack of effort, ability or accomplishments on the part of many and many conscientious and skillful investigators. But it is more due to a lack of will and desire on the part of the big majority in the profession, who because a universal technic and procedure has not as yet been perfected, hesitate to work out a procedure of their own, and assume the easiest method out for affording relief; this unsatisfactory condition is also due to a lack of will and desire on the part of this big majority to study, to study the broader developments disclosed by these conscientious and skillful investigators and to fortify themselves with the results of these investigations, so that the physician in the case may have an opportunity to know the why and the wherefore of a more rational diagnosis; this unsatisfactory condition is also due to a lack of will and desire on the part of the physician to become more dental-minded and on the part of the dentist to become more medical-minded, a necessary procedure recognized in all our leading schools today, for the pulpless tooth is one difficult and important problem in dentistry that must take into consideration biologic principles.

These investigators, both physicians and dentists, men pre-eminent in the field of research on the pulpless tooth and root-canal therapy, have found, from the histological point of view, that a filled and treated tooth is not necessarily an infected tooth, not even a dead tooth; that though the pulp is gone, this tooth is embedded in a highly vascular fibrous membrane, and that treatment and filling of the pulp canal can be accomplished even after infection has occurred. The results of their intensive research has proven that all pulpless teeth are not pathogenic, and that the policy of indiscriminate extraction of all teeth in which the pulps are involved is an irrational procedure, does not meet with medical and dental requirements, and much less the requirements of the patient. These results have also proven, that if dental infection is to be eliminated completely by extraction, then there is, at present, no limit as to where extractions would end other than in the elimination of all carious



and traumatized teeth which may have vital pulp degeneration, infective degeneration of the pulp.

Gentlemen, don't understand me as suggesting that all pulpless teeth can be saved by any method, however efficient; for that mythical one hundred percent is not reached in our field any more than in the medical field. But I do believe that it is at present within the ability of many operators to save a large majority of pulpless teeth, particularly in important positions in the mouth, through the principles of asepsis to surgical procedures, as demonstrated by the success of these procedures in the medical profession. These procedures involve physical factors, biology and the knowledge of immunology, and depend so much on the right sort of co-operation between the dentist and the physician.

The mouth and teeth, because of their position are easily examined, yet the determination of the nature and extent of oral infection is really a highly technical problem. It is true that any one can acquire much information from the study of dental radiographs, but to presume to arrive at a definite conclusion solely from their examination, and not in conjunction with the clinical history and symptoms of the case, is a type of folly that no good physician would be guilty of in the study of any part of the body. Interpretation of the radiographs is highly technical in itself and requires study, experience and good judgment for accuracy, as there are many confusing images and variations, the significance of which must be determined before rendering an opinion. Intellectually interpreting the radiographs means to be able to differentiate atrophy and trauma from disease; residual infection and infection around erupting third molars; medullary spaces from periapical disease; root resorption of vital teeth; peri-cementitis from periodontitis; pulp stones; significance of sclerotic bone and hypercementosis; the reaction of destructive drugs about the apex and the reaction caused by over-filling with gutta-percha; and so on. Gentlemen, it is the dentist's field, but should the radical procedure be advised, without case-history, just due to suggestive influences; don't we know, as dentists, that the substitutes for the individuals own teeth may do as great a harm and produce infection which did not previously exist? Haven't we seen deep pyorrhea pockets created through ir-

ritation produced by partial dentures, haven't we seen the growth of virulent bacteria beneath artificial dentures and fixed bridges worn by careless patients? A woman-patient of mine kept a one-tooth removable appliance in her mouth for one year without removing it, and when I removed it, the clasped-teeth were denuded of enamel at contact and the appliance was literally covered with tartar, not to say anything of the highly inflamed condition of the tissues. Is then the physician alone capable of deciding which is the greater risk?

As is the aim of modern medicine, so should be the aim of modern dentistry. Not to mutilate, but to preserve; and this cannot be accomplished through irrational and radical methods, but requires more effort and more attention to the patient's physical condition. To attain this most satisfactory result, the physician and dentist must be reciprocally helpful in arriving at a proper diagnosis. I have seen, and no doubt have you, many disappointments follow the rapid, extensive and radical sacrificing of teeth, where the principal objective was the clearing up of some systemic disorder. Our procedure should not be the result of suggestive influences.

The most important area of the pulpless tooth, the seat of the whole trouble, is that at the apex, and infection is the most serious accident that may occur to this periapical region. However such infections are secondary to these primary causes: pulp canal infections resulting from caries; from dental operations because of a break in the technic of asepsis; to extension from adjacent structures as the peridental membrane or a nearby infected apex; and to infection from more remote parts by way of the blood stream or lymph channels, which is more common than is usually believed. The great problem has been to sterilize and seal the opening of this apex in a manner acceptable to nature; and Dr. Howard Temple Stewart, New York, a skillful research worker, has, with a clean record of more than three-hundred cases extending over a period of four years and with most pleasing clinical results, proven this can be done. His method, purely surgical-proper drainage and cleansing of canal pulp contents, a drainage, as surgeons require for weeks instead of days, means the infection would not have been taken off by the surrounding tissue. Just as in

a compound fracture of the tibia, for instance, with resultant inflammation and suppuration, even with proper treatment, there will be no physiologic ossified callus expected to be formed until the necrotic tissue has been digested or thrown off. In treating dental infections there is more or less involvement of osseous tissue, and the necessity for, and extent of surgical interference here, is dependent upon the degree of destruction of the affected parts, the virulence of the invading organisms, the duration of the infectious process, and the resistance of the patient. And after all has been said and done, does not the physician await graciously, the efforts of nature to "fill in" and do her work, dependent upon the immunizing forces of the patient.

What the dentist does not consider, and of which there is little doubt, is that the same general rules obtain in the matter of healing of infectious conditions about the teeth and jaws that apply in other parts of the body. The teeth are of connective tissue origin, and their development and versatile manner of regeneration and repair, excluding the enamel, is characteristic of this widely distributed tissue of the human body; its possibilities of regeneration and repair are practically unlimited. And to supplement this advantage, we have as we all know, that most powerful antiseptic at our disposal, that antiseptic upon which, consciously and unconsciously, we are almost entirely dependent for overcoming every infection, that is, the activity of the living tissue cells.

We know that the presence of bacteria anywhere in the body does not necessarily indicate infection; there must be a reaction between the tissue cells and the bacteria before we have infection. Microbes are often present in organisms that manifest no morbid symptoms, and we know that all mouths are notoriously carriers of many kinds of microbes, some of them pathogenic. All of us in the practice of dentistry have seen free exudation of pus in the mouths of many persons who present no symptoms of systemic disturbances or even local discomfort.

F. W. Wilkinson, of the University of Melbourne, in a resume of the pulpless tooth, says: It is well to realize that nature does not demand absolute sterility and it has been shown that deep healthy tissue is not always sterile. We know that

nonabsorbable sutures have been used by surgeons, bullets are not always removed unless they produce symptoms, and various other substances are used in plastic work. In all such instances the foreign substance is separated from the more delicate cells by a permanent wall of connective tissue so that the foreign body is thereby completely encapsulated. This is also the outcome of a successful root-canal treatment and filling. The tip of the filling is enclosed by a cap of fibrous tissue, the borders of which become attached to the wall of the root-canal; the readiness with which this is accomplished depends not only upon the absence of infection but also upon the degree of the technical success attained in inserting the filling. Multi-rooted teeth do not complicate the operation, as the fibrous band of connective tissue is formed at the exit of the branch opening from the main canal; a fact proven by Dr. Edward H. Hatton, of Chicago, a skilled physician worker in the pulpless tooth research field.

Dr. Hatton, using microscopic anatomic methods, has demonstrated that many teeth that have been treated and filled are without histologic evidence of infection; and both steps in the progressive involvement of the periapical tissues in infection, and those in the healing of this region after treatment and filling of the pulp canal, were shown. Three methods of approach have been used by groups of workers in this country and abroad; bacteriologic, radiographic and histologic, which have given evidence of apical regeneration after root canal treatment has been built up. Grove, a pioneer in this work, saw two changes at the tooth apex following root canal treatment: one, a tendency for the apical peridental membrane to invaginate itself into such parts of the apical pulp canal as were not occupied by the filling material; the other, a tendency of the soft tissues to deposit new layers of cementum-like substance on the tooth apex, both inside and outside of the canal, but particularly inside of the canal. This last phenomenon, gentlemen, was shown to me in a case I had, by Dr. Clarence Simpson, of St. Louis. The radiograph was negative, but the tooth was extracted due to autosuggestive influences; and when the root was filed into, this new layer of cementum with a complete obliteration of the canal at the apex, was quite visible. Dr Simpson, Professor of radiology at Washington University,



and a national authority, tells me to quote him as follows: "The hallucinations regarding pulpless teeth have resulted in sins of commission in condemning harmless pulpless teeth and in sins of omission in ignoring diseased vital teeth." "If the foramina of some pulpless teeth are sealed by cementum, if some pulpless teeth have been kept aseptic and if some pulpless teeth are not sufficiently virulent to produce disease, then all pulpless teeth are not pathogenic.

Dr. Ewing P. Brady, professor of dental pathology at Washington University, and an authority on root-canal therapy, in answer to my request for his opinion, wrote me: "We know that all pulpless teeth are not pathogenic, the point under discussion now is whether the drugs used after mechanical injury produced by the surgical removal of the pulp, are not accountable for some of the rarefaction that we find about the root end, and quite often diagnosed from the radiograph as infection." Interesting work, along this line, is being done in England, today.

Dr. Clyde Davis, in a series of articles in American and foreign journals, whose method was modified pulp amputation, described, that after treatment, the pulp canal tissues in the apical portions of the roots which were not removed and which were vital, underwent a transformation and produced an osteoid tissue which was deposited on the walls to a degree that ended in the obliteration of the canals so treated. I could mention such men as Hess and Mueller of the University of Zurich; Blayney and Gottlieb, all having obtained results of regeneration in their extensive research work, and whose methods were checked by both the roentgen-rays and bacteriologic tests, and where this type of regeneration was found histologically, the bacteriologic examinations were negative, tissues were sterile, and the roentgen-ray examinations also negative.

In concluding, let me say to you that the purpose of my paper was not to give you assurance or overconfidence as to your procedure. You all know that the radical of today may become the conservative of to-morrow, and I merely place these facts before you, in the hope that it may change your attitude toward the properly cared for pulpless tooth, that it may be a means toward obtaining reciprocal co-operation, and that all will result in a diagnosis for the benefit of the patient,

with that high aim in mind, not to mutilate, but to preserve.

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#### CONTRACT PRACTICE

R. G. Leland, Chicago (Journal A. M. A., March 5, 1932), believes that although there are many details of contract practice which deserve much more detailed description and comment than is possible in his report, it may be stated that contract practice (1) took its origin largely from necessity; (2) has been legalized, in certain places, by state statute; (3) under certain conditions and in some forms is both ethical and legitimate; (4) in general, has become highly commercialized and competitive; (5) is largely limited to the pay roll class; (6) does not, in most cases, extend its provisions to women and children; (7) concerns itself, almost without exception, to curative medicine and does not include preventive measures; (8) shows no interest in public or individual welfare; (9) furnishes medical care which is often inferior in character; (10) in many instances is characterized by underbidding, subletting, misrepresentation and racketeering; (11) is economically unsound in many of its present forms; (12) is essentially sickness insurance usually not supervised or regulated; (13) is often used by the operators thereof to influence legislation in favor of extension of the plan; (14) in many of its present forms lowers the confidences of both the individual and the public in the medical profession; (15) has some features that deserve refinement and extension and others that are unethical and dangerous and should be abolished.

#### IOPAX: AN ANALYSIS OF RESULTS OBTAINED IN FORTY-FIVE CASES, WITH REPORT OF CASES SHOWING SEVERE REACTION FOLLOWING INJECTION OF IOPAX

James J. Joelson and Robert Zollinger, Cleveland (Journal A. M. A., March 5, 1932), made an analysis of the results obtained with iopax in forty-five cases. Diagnostic pyelograms were obtained in only 51 per cent of the cases, and completely satisfactory pyelograms in about 40 per cent of the cases. The best results were obtained in pyelitis of childhood, urinary lithiasis, congenital anomalies of the kidneys, and nephroptosis. Iopax was not satisfactory in the authors' cases of renal tuberculosis. One of the main deficiencies of the method was that the minor calices were frequently not visualized at all or were incompletely visualized. The drug may not be entirely nontoxic, as evidenced by frequent mild reactions and one severe reaction. The method is expensive, and this becomes a valid objection to its routine use when one considers the frequency with which unsatisfactory results occur.

# THE JOURNAL

OF THE

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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### EDITORIAL

#### THE COFFEE-HUMBER TREATMENT OF CANCER

Several years ago Doctors Coffee and Humber of the Southern Pacific Railroad, San Francisco, announced that they had what they believed to be a remarkable system of treatment of cancer. As the writer now recalls, the treatment was made up from a dilution secured from the adrenal glands. It was said that this dilution had a remarkable effect in many instances in making a growth almost miraculously disappear, or at least reduce it in size, and that it was especially effective in reducing or causing to wholly disappear the terrible pain sometimes ac-

companying this disease. Sometime after that, at the Detroit meeting, the writer discussed the matter with Dr. James F. Percy, of Los Angeles, who, at that time, had carefully studied the case histories, reports, treatment given, and the end results up to that time of the cases so treated. He had investigated more than 500 cases. Recently at the Oklahoma City meeting the writer again had the pleasure of talking to Dr. Percy about the matter, and now he is able to make a statement based upon the study of more than 2000 cases. He is very positive that neither Coffee or Humber claim, or ever have claimed to have a "cure" for cancer. That the matter was then and has always since been in the experimental stage.

Dr. Percy states that he has seen practically no "cures" from the use of the dilution but has seen remarkable results obtained in the disappearance or almost disappearance of the growth and he especially notes the remarkable effect it has had on the reduction or entire disappearance of pain.

Of course we all understand that in this we have no cure for cancer, but it must not be gainsaid that probably in this composition we do have a measure which, as above stated, does practically destroy the growth for a time, relieve the pain more or less and therefore it should probably be classed as a great aid in relieving these sufferers from one of the most dreaded diseases with which the practitioner has to deal.

#### THE LAST LEGISLATURE—WHAT IT DID NOT DO

The last Legislature is to be congratulated on its very good common sense in taking the sensible and modern view of the various measures presented before it. Among its acts were these:

The prohibition or sale of marijuana, veronal, barbitol, luminal, chloral hydrate, bromidia or somnos except on the prescription of a licensed practitioner of medicine, osteopathy, dentistry or veterinary medicine, which prevention would be almost the equivalent of requiring the purchaser to secure a prescription before buying a sack of common table salt or cooking soda.

We question the practicability of this law. It will at once place the drugs in the "bootleg" class, it will not prohibit the sale of a single tablet—on the contrary it



will force many poor people to go to a physician for a prescription in those cases where it is necessary for the relief of distress in long drawn out chronic, or incurable diseases. We believe the sale of these drugs should have been left just as they were. Now they will procure the drug as the addict procures his whiskey or narcotics, and in the end the law will do no good.

It refused to pass a legislative act permitting a poor, ignorant woman, far out in the western hills of the State, to follow her occupation of "curing" cancer, by the application of certain compounds she alleged would cure the disease. In this case too, we all know she has no cure for cancer but probably has a mixture that is a hundred years or more old.

It is left in the hands of the Governor as to whether the Post-Graduate Medical Extension work should be continued. Of course every physician in the State who studies these matters knows that this work is good not only for the physician but for the people at large, and should be continued. Its continuation, however, depends upon the amount of cash on or in sight, for, there are many other measures clamoring for continuation of appropriations, which lumped together amount to a considerable sum, which must come from the pockets of the taxpayers of the State. We hope however that the Extension work will be continued, for its cost is a relatively very small sum of money and it undoubtedly does a great deal of good.

It abolished the Union Soldiers' Home and this we agree to, for the Federal Government has ample provisions in various parts of the United States to care for these old men and it would seem a mere duplication of expense for the State of Oklahoma to continue to spend money upon these cases, when the National Government already has ample buildings, grounds, and hospitals for their care.

It refused to pass an act reducing the amount which a doctor might collect for a call to 25 cents per mile. It may be very sensibly seen that any physician would promptly refuse to make a call upon any such basis. The same physician, however, will make charity calls or tend the needs of the sick for *nothing*, if it is necessary, but to fix the amount at 25 cents per mile which one might charge for calling upon a well-to-do person, is pure folly. In the

end the act would probably have been held unconstitutional by the State Supreme Court.

We congratulate the Legislature on this action.

It refused to pass an act permitting Osteopaths to enter a State and County owned hospital upon the same grounds as a finely qualified physician is permitted to enter them.

—o—

## THE WOES TO WHICH THE DOCTOR IS EXPOSED

Ordinarily, what is known as the Statute of Limitations runs one year in ordinary cases, but occasionally extraordinary cases occur and we have now one such case on hand. Thinking it over it seems that it is unjust to be called upon to defend a suit many, many, years old, where the witnesses to what occurred may have died, or moved away. However, that does not prevent the bringing of a certain type of suit.

In this particular instance the plaintiff, one Henderson, sustained a fracture twelve years ago; a physician was called and this physician apparently rendered the best service possible, taking into consideration the type of fracture of the forearm which occurred. Unfortunately the patient happened to be only six years of age at the time. Now upon reaching legal age he has filed suit against the physician alleging malpractice. The chances are very strong that he will obtain nothing for the physician called in every available, competent man in reach to assist him in treatment and advice as to the case.

Of course it is a very well known rule of law, that a minor may bring suit for an occurrence which occurred many years prior to the affair, within one year after attaining his majority. But it certainly seems to us very unjust that a physician may be called to answer such a suit.

As we have pointed out before, keep a record of everything—what was found, and everything that was done to combat it, all of which may prove invaluable in later years. On this account we urge every physician practicing medicine to keep a card (we keep one 5"x8", and to that is often clipped other pages so that should any question arise in the future we have all the data at hand).

This is a very positive protection and

aid to us at all times. I simply pick up the card, read over the record, and know at once what happened at that time and what was done about it. We recommend this system to every physician.

In this connection it occurs to the writer that the physician should always retain the X-ray or a duplicate of it, for no one knows what disposition may be made of it, should it fall into the wrong hands.

## QUININE IN THE KATANGA REGION

It has for many years been generally supposed that quinine used in sufficient quantities, first in a therapeutic form and later as a tonic agent, would clear up practically any case of malarial infection. It will be recalled that the great authority, General Wm. C. Gorgas, made a trip to the western coast of Africa for the specific purpose of advising certain great mine owners how to eradicate malarial infection, which was so virulent in form that it was practically impossible to operate the mines on account of the existence of a malignant form of malarial infection.

This refers, however, to the Katanga copper mines, (page 1555, Journal of the American Medical Association, May 13, 1933), and the apparent failure of our old standby, quinine, to control malaria. The findings, briefly, are as follows: "Addressing the Cercle medical of Katanga, Mr. Staudt coordinated and summarized the reports rendered by the physicians of Katanga on the prophylactic use of quinine at various points in the province during the last rainy season (1931-1932). His conclusions correspond closely to those of Dr. Van Nitsen, as set forth in his article: 1. Quinine administered in prophylactic doses to native malarial children, who continue to live in a region in which malaria is widely prevalent, is incapable of preventing reinfections or of effecting a cure. 2. Quinine does, however, increase the resistance of the organism toward malarial infection, which is evidenced by a reduction in the general morbidity and in the mortality. 3. Quinine treatment should begin with a curative course and should be continued. 4. The best results were secured with adequate daily doses. 5. The general prophylactic use of quinine is burdensome and requires careful supervision. 6. The prophylactic use of quinine will not in itself solve the malaria problem."

This seems worthy of mention in our pages for the reason that certain sections of Oklahoma are subject to virulent forms of malarial infection and the infection prevails from year to year, so it seems warranted to note every means which might prove of use to the physician in the control of this ordinarily believed to be infection, which however, on occasion might prove very aggravating as to control.

## Editorial Notes---Personal and General

DR. W. J. RISEN, Hooker, was injured while driving from Oklahoma City, receiving a fracture of the left wrist.

DR. W. J. WALLACE, Oklahoma City, attended the meeting of the American Medical Association, Milwaukee, also the American Urological meeting, Chicago, in June.

MUSKOGEE COUNTY MEDICAL SOCIETY were the guests of the Muskogee County Dental Society, June 13th, at the Fite Clinic, and viewed the motion picture dealing with Research in Nutrition and Dental Health.

DR. AND MRS. W. ALBERT COOK, Tulsa, visited in Chicago in June. Dr. Cook also attended the Milwaukee meeting of the American Medical Association, as delegate of the Oklahoma State Medical Association.

DR. J. M. BYRUM, Shawnee, for many years Secretary of the State Board of Medical Examiners, has been reappointed for a term of four years. The many friends of Dr. Byrum will congratulate him upon his reappointment.

CANADIAN COUNTY MEDICAL SOCIETY held their regular quarterly meeting June 4th, as the guests of Dr. and Mrs. Joseph T. Phelps, El Reno. A dinner was served the guests, after which Dr. C. P. Bondurant, Oklahoma City, presented a lantern slide lecture on "Diseases of the Skin, Commonly Seen in General Practice." Dr. J. K. Kuhn, Oklahoma City, was the other additional guest. Dr. Erwin Walter Blatter, head of the medical staff of the Southwest Reformatory was made an honorary member of the Society.

## PATRONIZE OUR ADVERTISERS

The better journals in every business, technical and professional field are so important to the life and progress of the industry or profession they serve that, even in a selfish sense, it is good business for the factors in that industry or profession through a period like the present, to patronize the advertisers in their publication exclusively, when possible. For publications cannot live on news alone; they must have advertising patronage, and have it continuously.



THE FOLLOWING MEMBERS of the State Medical Association volunteered their services for the purpose of rendering addresses and clinics in the points indicated. A resolution was passed that the men should be thanked for their services, and the Journal takes great pleasure in calling attention to their work.

## DEGENERATIVE DISEASES

(Eastern)

Dr. J. T. Martin, Oklahoma City  
 Dr. A. W. White, Oklahoma City  
 Dr. Harry Wilkins, Oklahoma City  
 Dr. A. B. Chase, Oklahoma City  
 Dr. Tom Lowery, Oklahoma City  
 Dr. Wann Langston, Oklahoma City

(Western)

Dr. Wann Langston, Oklahoma City  
 Dr. C. J. Fishman, Oklahoma City  
 Dr. Lea Riely, Oklahoma City  
 Dr. G. E. Stanbro, Oklahoma City  
 (All from Oklahoma City)

## SOUTHEASTERN OKLAHOMA CIRCUIT

Dr. J. M. Byrum, Shawnee  
 Dr. C. C. Fulton, Oklahoma City  
 Dr. J. W. Moreledge, Oklahoma City  
 Dr. C. V. Rice, Muskogee  
 Dr. M. B. Glismann, Okmulgee  
 Dr. J. F. Kuhn, Oklahoma City  
 Dr. Pat Fite, Muskogee  
 Dr. A. C. McFarling, Shawnee  
 Dr. J. A. Walker, Shawnee  
 Dr. T. H. McCarley, McAlester  
 Dr. J. B. Eskridge, Oklahoma City  
 Dr. Wendell Long, Oklahoma City  
 Dr. J. W. Kelso, Oklahoma City  
 Dr. L. S. Willour, McAlester

## CANCER TEACHING CLINICS

Dr. E. S. Lain, Oklahoma City  
 Dr. M. M. Roland, Oklahoma City  
 Dr. Wm. E. Eastland, Oklahoma City  
 Dr. Thuringer, Oklahoma City

Also three doctors from every Society where the clinic was given; 35 in all out in these counties.

## DOCTOR JOHN A. JONES

Dr. J. A. Jones, 59 years of age, of Tonkawa, Oklahoma, died April 19, 1933, in Wesley Hospital at Wichita, Kansas, following an illness of several months.

Dr. Jones was born at Valparaiso, Indiana, January 23, 1874, and moved to Tonkawa, Oklahoma, in 1900, where he has practiced medicine continuously until a few months prior to his death.

He was a member of the Kay County Medical Society, Tonkawa Lions Club, Past President of the Local Izaak Walton League, Secretary of the Board of Regents of U. J. C., and U. P. S. for the past eight years, a member of Yeoman Lodge, Odd Fellow, Eastern Star and a Thirty-third degree Mason.

He is survived by his wife and one daughter.

## RUSSIANS AND LIQUOR

Russians seem to have more "drinking sense" than we, notwithstanding our idea of their benighted state. Ray Long, the American writer visiting Russia, states that even the better class of people drink Vodka all night, practically, without a drunk man in the party, this due to the fact that they take food continuously in between and along with the drink. Long says food acts as a blotter. Here in the United States we get a bottle of whiskey (the writer drinks nothing now, on account of his health, and not on account of his morals), and do not leave until the bottle is empty.

Long states that in every drinking place there are poster arguments against the use of liquor, cartoons showing a man being kicked off the job because he drank too much. It seems that the Russians realize the value of moral suasion and notwithstanding they have the most autocratic power above them, they have not gone as far as the United States in attempting to legislate temperance into the people.

Probably a medical Journal should not discuss this matter but we cannot refrain from noting the enormous loss of revenue due to the 18th Amendment and the further fact that enormous amounts of liquor are used in spite of every attempt of prohibitory law against it.

Merck & Company, on April 25th, dedicated the Merck Research Laboratory at Rahway, N. J. In commemoration of this event the Company has issued a remarkably handsome book, 8 $\frac{3}{4}$ x12 inches, containing seventeen pages of printed material, and twelve full page cuts, the latter showing various phases of laboratory work. The written material consists of an address by Mr. Geo. W. Merck, President, and Sir Henry H. Dale, C.B.E., M.D., F.R.S., Director of the National Institute for Medical Research, London, and Secretary of the Royal Society of London.

This publication will prove of great interest to the medical profession in general and may be obtained upon application to Merck and Company.

The introductory address of Mr. Merck contains general matters of interest, while the address of Sir Henry H. Dale, is entitled "Academic and Industrial Research in the Field of Therapeutics."

## PABLUM—MEAD'S PRE-COOKED CEREAL

Mead Johnson & Co., are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream and sugar may be added as desired.

Mothers will cooperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. It gives them the extra hour's rest in the morning and saves bending their backs over a hot kitchen stove in summer. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by C. P. Bondurant, M.D.  
413 Medical Arts Building, Oklahoma City

**Medical Shock Following the Use of Neoarsphenamine.** Orr (The British Journal of Dermatology and Syphilis, February, 1933).

This article deals with medical shock following the intravenous injection of .45 grams of neoarsphenamine. The idea is brought out that the condition produces a relaxation of the capillaries in contrast to the relaxation of the arteries and arterioles as occurs in surgical shock. For this reason the author considers that the use of adrenalin in medical shock is of little value. To offset this, large amounts of normal saline solution are used to increase the blood volume, giving a liter of the solution and repeating in five or six hours if necessary.

Subsequent to Orr's experience in treating medical shock following neoarsphenamine injection, the Alberta government clinics have adopted the following routine: "When a patient with nitroid crisis fails to respond within three minutes to adrenalin, medical shock is assumed and intravenous saline started at once."

Following this procedure, the author believes that medical shock should be largely eliminated as a cause of death following the intravenous use of neoarsphenamine.

**Treatment of Epithelioma of the Lip by the Dermatologist.** Joseph A. Elliott, M.D., Archives of Dermatology and Syphilology, Volume 27, No. 3, March, 1933.

The essayist states that his purpose in writing the paper is based upon three factors: first, to call attention to a rather common yet serious condition; second, to emphasize the fact that the dermatologist sees most of the early lesions of the lip, directly or indirectly, and is best qualified to diagnose them; third, to make a comparative analysis of the results in different methods of treatment.

The idea in regard to the etiology is stressed in that various forms of local irritation, both physical and chemical, play an important role.

Elliott calls attention to two clinical types: the papillary and the ulcerative infiltrating variety, pointing out that the latter type is dangerous much earlier and metastasizes sooner.

The author analyzes 66 cases of primary epithelioma of the lip without glandular involvement. All of his cases were treated by first obtaining a biopsy with a cutaneous punch under local anesthesia, using digital pressure to offset hemorrhage; coagulating immediately followed to prevent bleeding and then the entire lesion was thoroughly coagulated. Subsequently un-

filtered roentgen rays were given to the lesion and the glands of the neck treated by high voltage X-ray. Results were as follows: "Of all cases (66), 42 were treated over five years ago, 17 over three years ago and 8 from one to two years ago. There have been no local recurrences. None has shown metastasis to the glands of the neck. One questionable case in regard to origin has occurred in regard to a brain tumor.

**Sodium Dehydrocholate in Arsphenamine Poisoning.** Bernard Appel, M.D., Archives of Dermatology and Syphilology, Volume 27, No. 3, March, 1933.

The author calls to attention of the reader that Osborne and others have shown that arsphenamine has a very direct action on the liver and that degenerative changes begin in twenty-four hours after a lethal dose. Arsenicals cause two types of reaction which are related to liver metabolism; (1) jaundice; (2) nausea and vomiting.

The intravenous use of sodium dehydrocholate causes an increased bile secretion; hence, the author has treated six cases with this drug in those who have clinical manifestations of liver retention of arsenic as shown by jaundice or nausea or vomiting. In this preliminary report, the results were very favorable in overcoming these undesirable symptoms. In fact, the drug was used as a solvent for neoarsphenamine in those cases in which immediate nausea and vomiting were experienced and again very promising results were obtained. This allowed the continuation of the administration of neoarsphenamine in some cases that otherwise could not tolerate it.

In all cases of jaundice, the use of sodium dehydrocholate intravenously results in prompt recession of the icteric index.

The author did not mention any value of the preparation in combatting arsenical dermatitis.

**"Toilet-Seat Dermatitis" Produced by a Red Stain.** Clyde L. Cummer, M.D., Cleveland, Archives of Dermatology and Syphilology, Volume 27, No. 6, June, 1933.

This article reviews two cases of the author's that experienced a rather marked vesicular dermatitis occurring on the buttocks. In one instance, the toilet seat had been recently refinished by applying a red stain, followed by a coat of shellac, then varnish. Replacement of the seat with a white one eliminated the dermatitis. The patch test to the skin revealed an inflammatory reaction on the site corresponding to the stain.

In the second instance, the eruption occurred following the purchase of a new red toilet seat. The eruption cleared after a new white seat was installed.

The author carefully investigated the various possibilities of the irritating agent and concluded



ed that it was a sudan dye, although he was unable to prove this because his patient could not be found to make this specific test.

### EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

**Treatment of After-Cataract.** Lt. Col. Henry Smith, C.I.E., I.M.S. (Retired), Sidcup, Kent, England. *Archives of Ophthalmology*, Vol. IX, No. IV, April, 1933.

The author reports a case of a cataract which had been extracted by one of the most competent operators in the world by the capsulotomy method. A dense after cataract had formed, the iris being tied down to it all around. Wisely he had not attempted to needle it, for in such an after-cataract, needling means death to the eye. He told the patient that nothing more could be done. The author having atropinized the patient heavily, made an incision as if for an iridectomy, caught a piece of the iris and excised it. An iris repositor was then inserted through the opening into the posterior chamber and the after-cataract was separated from its attachment all the way around. The pupil, when released, dilated, and iris forceps were inserted and the after-cataract removed. There was no escape of vitreous. A week later the patient was sent home with normal vision with spherical lens. Extraction of after-cataract is almost universal now in India; there is not a case of needling recorded except in one hospital.

**Comments:** It is admitted by all operators that the ideal extraction of a cataract is in the capsule. The general surgeon does not remove a portion of an adventitious growth and intentionally leave a part of its capsule or covering, hoping that it will be absorbed. He attempts to remove the offending growth in toto. This is basically good surgery. The principle still holds in the extraction of the crystalline lens. If this procedure is not followed there is always the possibility of an iritis, of a varying degree of severeness, and an after-cataract with which to contend.

**Otitic Infection with Gastroenteritis in Infants.** By Max Rabbiner, Brooklyn. *The Laryngoscope*, Vol. XLIII, No. IV, April, 1933.

Rabbiner reports his recent observations in nine cases of mastoiditis in infants complicating gastro-intestinal upsets. In the nine cases reported the intestinal upsets varied in intensity from a simple failure to gain weight to uncontrollable diarrhoea, dehydration, and continued vomiting. The fact that a paracentesis, single or double, produced nothing but a serous fluid in two patients, did not deter the author from proceeding to a single or double mastoidectomy, if the patient failed to show improvement. The soundness of this procedure was demonstrated by the finding of pus and granulation tissue in the mastoid cells. Of the nine cases reported, eight were operated upon, resulting in four recoveries and four deaths. The ninth case was not operated upon being considered a poor surgical risk and finally came to the autopsy table. The age varied from one to eleven months. The sex of

the patient had nothing to do with the incidence of the disease.

Several of the leading authorities in the pediatric world are of the opinion that mastoid disease is an important etiologic factor in parenteral diarrhoea in infants.

The author's conclusions from the reported cases are: That in those infants having otitic infection with parenteral diarrhoea which cannot be checked by the pediatricists, mastoid surgery should be resorted to. The operation in all cases should be bilateral despite the fact that only one ear may show a definite otoscopic picture, while in the other the findings may be indefinite. Since the infection may be confined to the antrum and probably due to a localized pocketing of embryonal tissue around the aditus, the drum membrane does not show its true condition.

Rabbiner closes his report with a plea for closer co-operation between the pediatricist and the otologist.

**Epistaxis In Pregnancy Requiring Ligation of The External Carotid—Review and Case Report.** Abraham Strauss. *Annals of Otology, Rhinology, and Laryngology*, Vol. XLII, No. 1, March, 1933.

Strauss here reports a quite unusual case. In fact in his search of the literature, his was the only reported case to be found where ligation of the external carotid was resorted to in epistaxis in pregnancy. In the literature there are six cases reported of epistaxis during pregnancy, three of which terminated fatally. Interruption of pregnancy in one of these cases produced a cessation of the hemorrhage; pressure, cautery, and plugging anteriorly and posteriorly of the nares, stopped the other two.

DeLee, Williams, and Hirst in their publications mention nose-bleed as a common occurrence in pregnancy. Hirst states that the nose-bleed can be stopped by termination of pregnancy.

The facts as compiled by the author bear out the point that the occurrence of a severe nose-bleed in pregnancy takes place under the same conditions as a mild epistaxis, i. e., in women who have suffered from the affliction before becoming pregnant and also in the latter half of gestation.

Extensive laboratory work had been done on the case reported by Strauss. The other six cases reported in literature had no laboratory work with one exception. Etiology remains idiopathic although active hemorrhage usually comes from a ruptured septal artery.

Strauss tried packings and transfusion to no avail. In addition he used large quantities of glucose in an effort to combat shock and maintain the body fluids. The hemorrhage continued for about five days or until the external carotid was ligated.

The author was not able to find a reported failure to stop hemorrhage by ligation of the external carotid. In his opinion this procedure will always be efficacious because the direct blood supply to the nose is through the internal maxillary and sphenopalatine arteries. It is supplied indirectly through the ophthalmic branch of the internal carotid.

**Otosclerosis.** Charles B. Davenport, M.D., Bess Lloyd Milles, Ph. D., Lillian B. Frink, M.A., Cold Springs Harbor, N. Y. Archives of Otolaryngology, Vol. XVII, No. IV, April, 1933.

Davenport et al., after extensive work on this subject summarize their conclusions as follows:

By a rough estimate, about 0.2 per cent of the white population of the United States is otosclerotic. In certain fraternities 100 per cent are otosclerotic. The hereditary factor is thus obvious.

The petrous portion of the temporal bone, which contains the otic capsule, has a particularly complicated embryologic history, so that any disturbances or imbalances of the osteogenic function would be especially apt to affect the otic capsule.

The beginnings of deafness were first noticed in otosclerotic persons at from 4 to 55 years. Persons in the older group, are commonly, but not always with justification, suspected of progressive labyrinthine disease.

The original data of this paper were obtained, in part, by house to house visits of trained eugenic field workers, who gave auditory tests, and in part by correspondence.

Sixty new families were studied and the distribution of otosclerosis in them was analyzed to get at the law of inheritance.

Approximately twice as many females as males are affected with otosclerosis, but other types of hardness of hearing affects the sexes equally.

In body build otosclerotic persons do not differ significantly from their non-otosclerotic siblings of the same sex, except that in pelvic breadth, in relation to shoulder breadth, and in chest girth, the otosclerotic females seem to be more slender than their sisters.

When both parents are otosclerotic, nearly all their daughters are otosclerotic or have a hardness of hearing of some type (one exception in a case from literature). About two-thirds of the sons are otosclerotic.

When the mother only is affected, the proportion of affected sons and daughters is about the same.

When the father only is affected, the daughters are affected about 50 per cent more frequently than the sons.

When neither parent is affected and some of the children are affected, the two sexes are equally affected.

Ten hypotheses are tried out on the basis of these data, and the one that meets with no serious difficulty is: Otosclerosis develops under external conditions that favor it whenever the patient has a constitution that combines two dominant factors as follows: a factor X which lies in the sex chromosome and also a factor A, which lies in one of the autosomes.

The evidence that otosclerosis, labyrinthine hardness of hearing and deaf-mutism have the same genetic basis is hardly adequate; still, overlapping of these conditions may occur.

**Comments:** The detailed work involved in arriving at the above conclusions is comparable to the efforts of Shambaugh and associates in

1928, when they reported the results of the examination of over 3,000 deaf children.

Slightly momentary improvement or temporarily arresting the progress of the disease is the best the various methods of treatment have so far afforded.

It is agreed by the leading otologists that the cure of the disease appears to be impossible.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Bicipital Tenobursitis (Tenobursite Bicipitale)** by E. Pasteur, Val-de-Grace Military Hospital (de l'Hopital Militaire du Val-de-Grace), Paris, La Presse Medicale, January 25, 1933.

Presenting bicipital tenobursitis as an important and heretofore unrecognized entity, it is defined as an inflammation of the long tendon of the biceps cubiti in the bicipital groove of the head of the humerus, together with the bursa which surrounds it in that location.

The principal assigned cause is an unusual and violent muscular effort through which the tendon is violently stretched, frequently associated with some general infectious disease. For example, one patient was standing in a trolley car, supporting himself by grasping a perpendicular bar above the level of the head. In resisting the sudden pressure by the crowd when the car stopped there was violent contraction of the biceps. A direct fall on the shoulder or upon the tense, extended hand may produce the same effect. There is in this case a reflex defense contraction to resist the loss of equilibrium by grasping any object within reach.

The initial symptom is pain which is accentuated by any movement that disturbs the tendon as it lies in the narrow bicipital groove. For example, it is painful to carry the hand to opposite shoulder, to elevate the arm when it is in rotation, and to carry the hand behind the back. There is tenderness when pressure is made over the tendon.

To pain is added weakness, and, later, stiffness so that any movement of the joint is impeded, but especially elevation of the arm.

In the average case not properly treated there is an apparent ankylosis in two or three months, but X-ray does not show osteophytes or any other evidence of bony ankylosis.

The author has found that the Faradic current is the most satisfactory treatment, improvement coming on quickly after several seances, with final definite cure. Untreated, the arm is practically useless.

**Comment:** In this connection, we have seen several cases of inflammation of the superficial acromial bursa. We can see how disease described by Pasteur might be confused with it. In superficial acromial bursitis the pain is intense, and the tenderness over a very circumscribed area just at the outer margin of the acromion is most exquisite.

—LeRoy Long.



**The Use of Folliculin in Involutional States.** By Elmer L. Sevringhaus, M.D., Madison, Wisconsin. *American Journal of Obstetrics and Gynecology*, March, 1933.

This article is the third of a series upon the subject of using folliculin in the involutional states experienced by women at or near the menopause. The two previous articles dealt with the results obtained, with particular reference to vasomotor disturbances and in menopausal syndromes quite similar to thyrotoxicosis. This paper deals primarily with the results of similar treatment in regard to the psychic and nervous phenomena, which are also commonly seen.

The additional therapy employed was simply psycho-therapeutic procedures. The principal therapeutic measure was small doses of folliculin daily, or oftener. These were found to be very helpful in the psychotic cases as well as in the simpler vasomotor types and the pseudo-thyrotoxic types.

It is pointed out that the cases of artificial menopause are more refractory to therapy, and the relationship of the pituitary and the ovaries at the climacteric is discussed.

One of the very important observations made is the fact that there are distinct disadvantages to large doses of the hormone. This author recommends an upper limit of 40 units per day in the treatment of menopause.

In view of his clinical experience, and since there is no known method of estimating the required dosage in advance, he has used some 10 to 25 units at one time, given once or twice daily. Theoretically, he feels that the more frequent small doses are better than the larger and less frequent ones. He lists the various unsatisfactory results of higher dosages and also points out that the manufacturers of this preparation have advised the use of daily doses as high as 200 units.

**Comment:** It has been my experience that in a fairly good percentage of the women suffering from psychotic, vasomotor and pseudo-thyrotoxic symptoms at or near the menopause material benefit results from the use of folliculin exactly as pointed out by this author.

The use of small, frequently repeated dosages has been very much more satisfactory in my hands than either higher dosages infrequently, or frequently repeated.

It is at once appreciated in discussing such therapy that many difficulties necessarily arise from our incomplete knowledge of the mechanism involved, the amount of deficiency, and the mode of application. Nevertheless, in these difficult situations, the additional aid furnished by this newer method of treatment is invaluable in a certain number of cases seen.

—Wendell Long.

**The Treatment of Non-Union of Fracture by the Injection of Serum from Another Patient with Fracture (Le Traitement des Pseudarthroses par les Injections de Serum de Fracture).** Report of M. Kuss at meeting Paris Surgical Society, March 8, 1933. Abstract published in *La Presse Medicale*, March 18, 1933.

The report is based upon three observations by M. Raymond Imbert and M. Leon Imbert, of

Marseilles. In the first case a man of 30 years had a non-union without any X-ray evidence at all of callus five and one-half months after fracture of the femur. On three different occasions 10 c.c. of serum secured from a donor who had a normally healing fracture (serum provenant de' un autre sujet fracture, en pleine phase de' osteogenese), was injected about the site of non-union. There was union in three months. In the two other cases the serum was injected beneath the skin. Satisfactory union resulted.

Referring to the initial studies of the question by Guyot of Bordeaux and Leon Imbert of Marseilles, and to the experimental researches of Petrault upon dogs, and of Luiji Baj upon guinea pigs, attention is called to the importance of the biological researches of Damboviceanu and Cospicesco upon the phenomenon of the calcification of the shell of the lobster during the molting season. The reporter concludes that the employment of serum from the "fractured" is efficacious in the treatment of pseudarthrosis.

—LeRoy Long.

**Sarcoma of the Internal Semi-Lunar Cartilage of the Knee (Sarcome du menisque Interne du Genou** by Gino Pieri, *La Presse Medicale*, March 4, 1933.

The subject is discussed in connection with the case of a robust man of 31 in good general condition.

There had been intermittent pain in the left knee for five years, the pain usually appearing on walking, and being more pronounced at the change of seasons and change of weather.

During the past few years the pain was sharper and more continuous. For several months there had been localization on inner side of joint, and there was a small tumefaction at that point. The joint was a little stiff.

For several weeks before examination the tumefaction increased more rapidly, the pain persisted through the night, the knee was not stable, and active motion diminished.

Examination showed slight deformity of the left knee by a firm, elastic, smooth, tender, rounded enlargement about the size of half a walnut just below the patella on inner side, the horizontal diameter being a little the larger. It was fixed to the subjacent bone. The skin over it was normal and movable.

The movements of the knee were distinctly limited.

Operation was done through a Mackenzy incision, the patella tendon being divided in its middle third. Exploration revealed a tumor the size of a hazelnut occupying the anterior part of the internal semi-lunar cartilage which was extirpated without difficulty.

Examination of the gross specimen indicated that the tumor took origin from the superior border of the anterior part of the cartilage. The pathologist reported that sections showed a fusiform protoplasm, irregular globulous cellular elements, with vesicular areas, as well as occasional polynuclear giant cells. The pathological diagnosis: "fuso-cellular sarcoma," (sarcome essentiellement fuso-cellulaire).

Four months after operation the knee was

stable, painless, and apparently perfectly normal.

—LeRoy Long.

**Avertin Anesthesia—A Study of 431 Cases Compared with 431 Similar Cases Operated on Under Other Types of Anesthesia, at the Brooklyn Hospital, by William H. Field, M.D., and Lewis L. Pilcher 2nd, M.D. of Brooklyn, N. Y. Annals of Surgery, April, 1933.**

These authors have studied in a conscientious and apparently fair manner 431 cases who were given avertin anesthesia and 431 controls. These cases were selected from the routine work of a general hospital rather than for particular use in this study. The comprehensive manner in which they have listed their conclusions makes it desirable to quote the advantages, disadvantages and observations which they make in regard to the use of avertin anesthetic as applied to the necessary needs arising in a general hospital or in general surgical practice.

**Advantages—Pre-Operative.** 1. Can be administered in bed without discomfort. Induction resembles natural sleep.

2. In cases of hyperthyroidism, emotional instability, etc., pre-operative excitement can be abolished by having patient's nurse give the avertin as if it were an ordinary enema.

**Operative.** 1. When supplemented with gas-oxygen, satisfactory anesthesia and muscular relaxation can often be obtained for many surgical operations which usually require deep ether anesthesia, including laparotomies and orthopedic manipulations.

2. When ether is needed in addition to the gas oxygen, the amount required is markedly reduced.

**Post-operative.** 1. Amnesia is usually produced covering the operative and early part of the post-operative period.

2. Immediate post-operative distress is in many cases considerably decreased due to (a) prolonged drowsiness; (b) decreased vomiting; (c) decreased respiratory irritation; (d) decreased ether-taste.

**Disadvantages—Pre-operative.** 1. Solution must be freshly prepared for each case and carefully tested for proper temperature and acidity.

2. When once administered, dosage cannot be decreased because of rapidity of absorption.

3. Length and variability of induction period may delay the operating schedule.

**Operative.** 1. Depth of anesthesia with a given dose is uncertain and variable. For this reason cannot be satisfactorily used to avoid the use of ether (as when electro-cautery is used for head or chest operations, etc.).

2. It is unsatisfactory when used with local or regional anesthesia because patient is uncooperative while retaining power of motion or speech.

3. Anesthesia cannot be lightened if patient's tolerance decreases, as in the event of serious hemorrhage or operative shock.

**Postoperative.** 1. Prolonged post-operative special nursing is required because of long period of semi-coma and irrational restlessness.

2. Excretion is slow and is almost solely

through the kidneys. Kidney output is frequently diminished markedly after operation, making excretion even slower.

3. The wide variation in susceptibility to avertin and narrow margin between the therapeutic and the toxic dose results in the occasional occurrence of toxic symptoms, and even death, after moderate doses (100 milligrams per kilo or less).

**Conclusions.** We feel, after studying these 431 cases of avertin administration and the 431 controls, that "Avertin Fluid" used as a basal anesthetic in combination with gas-oxygen or gas-oxygen and ether has some advantages not possessed by most other anesthetics and that accordingly it has a distinctly useful place in the role of anesthetics. There are on the other hand, several definite disadvantages which must be considered in selecting avertin for any given case.

The occurrence of toxic and overdosage symptoms in several cases with at least one fatality, after the administration of doses of 100 or 80 milligrams per kilo, indicates to us that this dosage is not entirely safe for routine use. We feel that the 80-milligram and 100 milligram doses have no important advantage over the 60 to 70 milligram dose and are considerably more dangerous. The 60 to 70 milligram dose, especially when combined with a pre-operative hypodermic of morphine, usually produces the essentials of a basal anesthesia. When this is adequate, there is no objection to giving a basal anesthesia. When this is adequate, there is no objection to giving a small additional dose of avertin after the effect of the initial dose has been fully observed.

The occasional production of complete anesthesia by the larger doses is, we believe, by no means an advantage, indicating rather an overdose with the associated greater risk. We feel, also, that any slight increase in the patient's comfort which may follow the use of larger doses is greatly outweighed by the increased liability to overdosage and to toxic reactions. We would prefer to use avertin only to obtain the minimal satisfactory basal anesthesia and to complete the anesthesia with gas-oxygen or, when necessary, ether. More ether seems safer than more avertin.

We consider certain conditions to be absolute contra-indications to the use of avertin—at least until more is known about the chemistry of detoxification and excretion of avertin in the body. In the presence of any of these contra-indications we would not consider even the 60 milligram dose safe to use.

Foremost among contra-indications we would place and condition lowering liver function. This would include not only intrinsic pathology of the liver and its ducts, but also circulatory insufficiency with consequent liver congestion and any condition associated with marked depletion of glycogen. Any evidence of decreased kidney function should be considered of almost equal importance as a contra-indication. This means not only evidence of decreased function before operation as demonstrated by urine and blood tests, but also the probability of function being decreased more than usual following operation due to such causes as trauma to the urinary tract, post-operative shock, post-operative dehydration, etc. A review of the fatal cases discussed



above shows that in many of them there was evidence of impaired liver or kidney function and in some of them, primary disease of these organs.

As other contra-indications we would include:

1. Severe cardiac disease—because of the depressant effect of avertin on the circulation and because of the congestion of liver and kidneys associated with poor cardiac function.

2. Old age—because old people are often hypersusceptible to avertin on the circulation and because of senile and arteriosclerotic changes usually present in liver and kidneys.

3. Cachexia—because of the probability of lowered tolerance for all drugs, including avertin, and because of the usually poor glycogen metabolism.

4. Marked shock or dehydration—primarily because of effect on kidney function.

5. Marked acidosis or acute toxemia—because of disturbance of body chemistry and metabolism which may have a harmful effect on avertin detoxification. It is a question if severe thyrotoxicosis should not also be included in this group.

By adhering to the contra-indications and by using the 60 to 70 milligram dose rather than the larger doses, we feel that in the future we may prevent many undesirable reactions and avoid any avertin fatalities."

**Comment:** The choice of an anesthetic is an important consideration in any contemplated surgical procedure. With the numerous agencies which are now available and used extensively, the choice of an anesthetic depends largely upon the indications and contra-indications presented by each type available and application to each individual case and his particular condition.

Such studies as this one are valuable in acquainting the medical profession with the factors involved in the use of anesthetic agents in the "average run" of surgical situations.

—Wendell Long.

## BOOK REVIEWS

**International Clinics.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otolaryngology, Rhinology, Laryngology, Hygiene, and other topics of interest. By leading members of the medical profession throughout the world. Edited by Louis Hamman, M.D., Visiting Physician, John Hopkins Hospital, Baltimore, Md., and others. Cloth, 314 pages.

This volume is unusually rich for those physicians interested in the degenerative diseases. For instance we have:

"Hyperinsulinism," by Russell M. Wilder.

"Pulmonary Hypertension," by William S. McCann.

"Stenosis of the Coronary Arteries," by Louis Faugeres Bishop, Jr.

"Dyspnea As A Symptom of Disease," by C. Sidney Burwell.

"Cyanosis," by Jonathan C. Meakins.

"Edema," by Chester S. Keefer.

"Causes of Hypertension," by John T. King, Jr.

"Clinical Manifestations of Arterial Hypertension," by R. H. Major.

"Prognosis of Hypertension," by James E. Paullin.

"The Treatment of Essential Hypertension," by Herman O. Mosenthal.

Of course the volume is rich in many other matters—Surgery, Therapeutics, Roentgenology, Clinical Pathology, Recent Progress In Obstetrics and Pediatrics.

**Medical State Board Examinations.** Topical Summaries and Answers. An Organized Review of Actual Questions Given in Medical Licensing Examinations Throughout the United States. By Harold Rypins, A.B., M.D., Secretary, New York State Board of Medical Examiners; Member, National Board of Medical Examiners; Associate in Medicine, Albany Medical College; Former President, Federation of State Boards of Medical Examiners of the United States; Former Instructor in Medicine, University of Minnesota. Cloth, 448 pages, price \$4.50. J. B. Lippincott Company, Philadelphia.

This book is written for the special use of the student who has to face the ordeal of the State Board Examination. It is the result of ten years' experience with candidates for admission to the practice of medicine, and has been written in response to repeated requests from them for guidance in meeting the ordeal of the licensing examination.

**Diet in Sinus Infections and Colds.** By Egon V. Ullmann, M.D., Formerly Special Lecturer for Biology at the Orgeon State College; Instructor at the First Medical Clinic at the University of Vienna; Demonstrator at the Laryngological Clinic (Professor Hajek), at the University of Vienna; Assistant Physician at the Otolaryngological Clinic (Professor Neumann), at the University of Vienna; Member of the Research Staff of the State Serum Institute of Austria. Recipes and Menus by Eliza Mez. Cloth, 166 pages, price \$2.00. The MacMillan Company.

The problem of diet is becoming constantly more important in the minds of physicians engaged in any and all lines of work. The author states that this is the first work constituting a systematic attempt to apply modern knowledge of nutrition to the individual who suffers from repeated colds and sinus diseases. This book, too, will also appeal especially to the specialist, but will be found useful in the hands of the general man.

**Senile Cataract.** Methods of Operating, by W. A. Fisher, M.D., F.A.C.S., Chicago. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College; Formerly Professor of Clinical Ophthalmology, University of Illinois; Formerly Surgeon, Illinois Charitable Eye, and Ear Infirmary; Formerly President, Chicago Ophthalmo-

logical Society; Member, Illinois State Medical Society; Chicago Medical Society; Fellow, American Medical Association; Fellow American College Surgeons; Fellow of the Academy of Ophthalmology and Oto-Laryngology. With the collaboration of Professor E. Fuchs, Vienna, Austria; Professor I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind, India; Dr. John Westley Wright, Columbus, Ohio; Dr. A. Van Lint, Brussels, Belgium; Dr. O. B. Nugent, Chicago, Ill. 267 pages, 183 illustrations, 112 of which are colored. Published by Chicago Eye, Ear, Nose and Throat College, Chicago.

The originator of this volume was Professor E. Fuchs of Vienna, who has passed away since the first publication and editions following it. The work is carried on by the authority indicated. It will be noted that these authorities are scattered all over the world, one from India, where cataract seems to be a national disease. This volume of course will appeal directly to the specialist in eye conditions.

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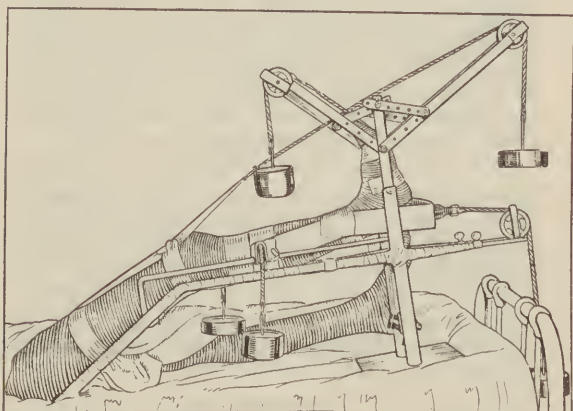
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## A SYMPOSIUM ON DIABETES

1. SIGNIFICANCE OF GLYCOSURIA - - - Geo. L. Driner, M.D., Ponca City
2. DIABETES IN CHILDHOOD - - - Lea A. Riely, M.D., Oklahoma City
3. DIABETES MELLITUS AND ITS RELATION TO VASCULAR DISEASE  
Homer Ruprecht, M.D., Tulsa

Presented before Section on General Medicine, Forty-first Annual Session, Oklahoma State Medical Association, Oklahoma City, May 16, 1933

### DIAGNOSIS OF DIABETES MELLITUS —SIGNIFICANCE OF GLY- COSURIA

GEO. L. DRIVER, A.M., M.D.  
PONCA CITY

#### OUTLINE

Diagnosis of Diabetes Mellitus; Significance of Glycosuria.

1. Introduction.
2. Etiology.
3. Pathology.
4. Symptomatology.
5. Diagnosis:
  - a. Physiology of carbohydrate metabolism.
  - b. The glucose tolerance test.
  - c. The renal threshold.
6. Differential diagnosis.
7. Case reports.
8. Summary.
9. Conclusions.

#### INTRODUCTION

The diagnosis of diabetes is not, as a rule, attended with any unusual difficulty. However, certain factors are worthy of consideration in the establishment of a diagnosis, and it is the purpose of this paper to consider some of the more important ones. It is commonly accepted that the finding of sugar in the urine is diagnostic of diabetes. This is true in a vast majority of cases. Within the last

one or two decades the increasing number of insurance examinations and the routine industrial examinations of employees have brought about the discovery of a considerable number of cases, which would have otherwise gone on unrecognized. This perhaps explains the increasing incidence of diabetes as shown by statistics<sup>1</sup>. Whether the present day mode of living, the modern diet and increasing tendency toward a sedentary life, are responsible for the growing incidence of this disease, has not as yet been shown. It would perhaps be more logical to assume that better diagnostic methods, a better education of the laity, and the more frequent examination of individuals, are responsible for the apparent increase in the number of diabetics under treatment today. In view of the gravity of diabetes, the urgent need for treatment, and the present day better methods of management, it behooves the medical profession to acquaint itself with those facts which contribute to better methods of diagnosis. Furthermore, an adequate knowledge of glycosuria, whether it be of diabetic origin or due to other causes, is most essential to the better practice of medicine. The finding of sugar in the urine is not universally diagnostic of diabetes, but every individual in the writer's opinion, who reveals such condition is a potential diabetic until proven otherwise. This may appear to be a broad statement, but if we analyze carefully, the causes of glycosuria, its significance can

be readily appreciated. There is too great a tendency to pass judgment on a case following a hastily or carelessly examined single specimen of urine. The patient examined today who shows a trace of sugar might tomorrow, if properly examined, show a truly diabetic condition. Such a case deserves the examination of not less than three twenty-four hour specimens, and a careful history and clinical examination. The blood sugar may be determined but is not in all cases possible due to lack of facilities and it is not always necessary.

The urinalysis in diabetic diagnosis may be said to be analogous to the Wassermann reaction in the diagnosis of syphilis. However, the actual diagnosis, the clinical findings and other laboratory facilities are available. If such procedures are carried out true diabetes will never be confused with non-diabetic causes of glycosuria<sup>2</sup>. Neither will the true diabetic be overlooked, only to be later discovered in coma, thus jeopardizing his life when his condition might have been recognized and a satisfactory and safe regime of treatment been outlined for him. The writer has within the past two years observed two such deplorable events.

#### ETIOLOGY

The etiology of diabetes is as yet obscure. One cannot, however, disregard the predisposing factors. A careful history of each case will not infrequently prove quite important not only from the standpoint of diagnosis but will prove valuable from a prognostic point of view. Age is important; the great percentage of cases occur in the fifth and sixth decades of life<sup>3</sup>. Less than five per cent of cases occur during the first decade<sup>4</sup>. Juvenile diabetes is, in the experience of the writer the most malignant form. Not infrequently I have seen it occur at puberty in a very severe form. Statistics indicate that males are more susceptible to the disease than females. The high incidence of the disease in the Jewish race is a well established fact. The Hindus in India are peculiarly susceptible<sup>5</sup>. Heredity is unquestionably of vital importance. Every case should have a careful family history taken. Von Noorden and Pleasants have shown conclusively that there is a definite familial tendency to diabetes mellitus<sup>6</sup>.

Diet as a predisposing factor is perhaps exaggerated. However, the writer has

found, particularly diabetes in children, to occur in those who have been excessive consumers of sugar, such as candy, fruits, etc. Obesity is without question a factor, but it too is over emphasized<sup>7</sup>. Nervous strain, syphilis, arteriosclerosis, pregnancy, etc., are worthy of mention but not elaboration.

Personally, I feel that acute infections have not received the consideration they merit as a causative factor. During the past three years, I firmly believe that I have observed three severe cases of diabetes to develop following an attack of so-called "flu." We have frequently seen a severe case of acute nephritis follow an acute tonsillitis or scarletina; or an endocarditis follow an acute follicular tonsillitis, or acute rheumatism. Is it not logical to infer that a fulminating attack of diabetes might follow an acute infection, due to the toxic affect of the disease upon the pancreas. I am also of the opinion that there is a wide difference between the cause of diabetes in the young and that in the older individuals. Diabetes in advanced life seems to be the end result of degenerative changes; in the young the result of the action of a toxin.

There has been many theories advanced to explain the cause of diabetes. None have proven satisfactory, and they have one by one gradually been abandoned. At present it must be admitted that the direct exciting cause has not been discovered. As regards disease of the pancreas, there is no consistent finding, to which the etiology can be attributed.

#### PATHOLOGY

In 1928 the writer received the necropsy reports on all fatal cases of diabetes mellitus which had come to postmortem examination at the Peter Bent Brigham Hospital in Boston, over a period of fifteen years<sup>8</sup>. The total number of cases was forty-seven. Gross pathology of the pancreas was not remarkable. The histopathology revealed the following findings:

Four revealed hyaline degeneration of the islands of Langerhans.

Twenty-two revealed sclerosis of the islands of Langerhans.

Five revealed sclerosis with hyaline degeneration of the islands.

Ten revealed arteriosclerotic changes.

Two revealed complete necrosis of the islands of Langerhans.

One revealed amyloid changes.



Three revealed no pathologic changes in the islets.

It is of interest to note that the most consistent pathologic change in the islands of Langerhans was sclerosis; it was present in 46.2% of the necropsies studied. On the other hand all types of pathologic changes were present and in three cases the islets revealed no pathology whatsoever. Yet these three cases were fulminating cases and death was due to diabetic coma. What are we to infer from these statistics? Quite evidently this data throws little light on the direct cause of diabetes, at least not from a pathologic standpoint.

A study of the pathologic changes in the pancreas of fatal diabetics identical with that of the writer is reported by Cecil<sup>1</sup>. His group comprises 90 cases; 43.3% of his cases revealed sclerosis of the islands of Langerhans; 21.1% revealed hyaline degeneration. It is a striking fact that he found 12% of his cases showed no pathology of the pancreas as compared with only 7% in my series of 47 cases. It will be noted that Cecil's findings closely parallel those reported above. We can only say, however, that sclerosis is the most consistent pathologic change, and the islets may even be normal.

#### SYMPTOMATOLOGY

The symptomatology of diabetes is not, as a rule striking. Usually the first symptom the patient becomes aware of is polyuria. Coincident with this is excessive thirst. The patient will often remark to a friend or to the physician that he cannot get enough water to drink. Usually the onset is fairly gradual, progressively increasing in severity. The intake of enormous quantities of fluid and a large output are common early manifestations. There is more frequently an increase in appetite, yet in some cases anorexia may occur. Loss of weight is quite common, especially if the disease progresses for a period of time without treatment. Many diabetics, prior to the onset of the disease are quite obese; this fact, too, explains weight loss. Pruritis is common, pruritis vulvae in females, balanitis and pruritis ani in males<sup>4</sup>.

Weakness, diabetic neuritis, trophic skin changes, obstinate eczema, furunculosis and a variety of similar symptoms, will be elicited with a carefully taken history and should lead one to suspect dia-

betes, even before the urinalysis is done. Notwithstanding, a vast majority of diabetics are recognized coincidentally during a life insurance or industrial examination, or in the course of an examination for some other suspected disorder. This fact only tends to strengthen the argument in favor of a careful history, and clinical examination of all patients by the physician.

The following case is typical of the usual onset of diabetes<sup>5</sup>.

July 30th, 1931, a white female, age 14, of Caucasian descent, entered the office with the complaint of unusual thirst, the passing of large quantities of urine, weakness, loss of appetite and loss of weight. Duration of these symptoms, about twenty-one days. Four weeks prior to entry she had had an attack of influenza. There was no family history of diabetes. The history revealed that she had always been fond of candy, pastry, etc. Onset of puberty six months prior to entry. Her type was thin and rather frail. Urinalysis on a single specimen revealed four plus sugar. Blood sugar on fasting diet 296 mgs. per 100 c.c. blood. The patient was admitted to the hospital for treatment. Twenty-four hour specimen revealed 2.8% sugar. The patient was taught to test her own urine, and was released on an 1800 cal. diet. C. 60, P. 80, F. 120, with U XII insulin t. i. d. 20 minutes before meals. She responded nicely for the next ten days.

She was not seen again for a period of several days when she was admitted to the hospital in profound coma. A check-up on the history revealed the fact that the family was practicing Christian Science and that for one week the patient had discarded treatment for the administrations of a practitioner.

On this admission the urine revealed a four-plus sugar. The blood sugar revealed 520 mgs. per 100 c.c. blood. The C O combining power of blood was not determined. Usual measures of treatment were instituted. During a period of eight hours the patient received 290 units of insulin. She revived from the coma and was quite normal in twelve hours. Recovery was uneventful. She was discharged from the hospital in four days following an uneventful recovery. Recent investigation reveals the fact that she later discarded treatment for Christian Science and suc-

cumbed to a diabetic coma in a neighboring city.

### DIAGNOSIS

The diagnosis of diabetes mellitus as previously pointed out depends primarily upon the finding of sugar in the urine. Glucose is not a normal constituent of the urine<sup>4</sup>. Its presence is indicative of an abnormal condition existing in the body. It may be benign, as observed in alimentary glycosuria, or "renal diabetes." On the other hand it may be inductive of true diabetes. Again it may be associated with non-diabetic conditions such as hyperthyroidism hyperpituitarism and other disorders, serious but nevertheless essentially non-diabetic.

#### A. PHYSIOLOGY OF CARBOHYDRATE METABOLISM

If one considers carefully the physiology of carbohydrate metabolism, it will enable him to better understand the value of clinical and laboratory data in making a diagnosis of diabetes. One hundred per cent of all ingested starch is converted into glucose. Fifty-seven or fifty-eight per cent of protein is converted into sugar<sup>4</sup>. Ten per cent of fat is available glucose. The normal fasting blood sugar varies between 80-120 mgs. per 100 c.c. blood (Folin-Wu). The urine is normally sugar free.

There is two definite phases of carbohydrate metabolism; that concerned with the storage and utilization of glucose by the liver and that by the tissues. The role of the liver is vitally important. Sugar is absorbed from the intestine in the form of glucose and carried by the portal system to the liver. A portion of this is utilized directly by the liver, the process being known as glycolysis. That which is not utilized is converted into glycogen and stored. This process is known as glycogenesis. The normal liver is capable of storing 150 to 200 gms. of sugar<sup>8</sup>. The stored liver glycogen serves as a supply to maintain the normal blood sugar level. Glycogenolysis, or the reconversion of the liver glycogen into glucose occurs through the action of an enzyme, other than insulin, although it is probable that insulin also plays a part in this process.

The important role of insulin is believed to occur in tissue glycogenolysis, i. e., the conversion of the glucose in the blood into tissue glycogen, in which form it is capable of being utilized for the carrying on

of the metabolic processes of the body. As in the liver there is stored in the tissues a glycogen reserve; this process being designated as tissue glycogenesis. It is through these two very important mechanisms that a sugar reserve is maintained and a constant available supply is present in the body.

One can readily see that any condition affecting the storage or utilization of sugar in the liver or tissues will definitely affect carbohydrate metabolism. Serious liver damage as well as insulin deficiency is then a factor. Another metabolic influence is worthy of mention, epinephrine.

Epinephrine<sup>8</sup> or adrenalin has a very pronounced effect on increasing the amount of sugar in the blood, either by more rapidly releasing glycogen from the liver or by inhibiting the extraction of glucose from the blood by the tissues<sup>8</sup>. A rise of 35 to 49 mgs. of sugar per 100 c.c. blood will occur in forty-five minutes following the administration of M. X. of 1 to 1000 adrenalin chloride<sup>8</sup>. This phenomena is perhaps a vital protective mechanism at times in the prevention of sudden hypoglycemia in normal individuals as well as diabetics following an over supply of insulin.

It is apparent that there may be all degrees of severity in diabetes. Physiologically the seat of trouble might be in the liver, in tissue utilization or even in the kidney. The term alimentary glycosuria has been coined to explain the presence of sugar in the urine during the process of digestion, and not at other times. There is considerable argument as to whether alimentary glycosuria is a benign condition or one which should be regarded with no little concern. Ringer<sup>9</sup> states that he has reached a point where he considers all his alimentary glycosurias as mild diabetics. Certainly they merit close observation over a considerable period of time. What tests should one employ to substantiate the urinary findings. Unquestionably the blood sugar is reliable. A relative increase in the blood sugar proportionate to the glycosuria is quite suggestive that diabetes exists.

#### B. GLUCOSE TOLERANCE TEST

The glucose tolerance test is an excellent guide. Several methods have been devised for the carrying out of this test. The ingestion of 1.75 gms. of glucose per kilogram body weight will show a rise in the blood sugar of 40-50 mgs. per 100 c.c.



blood, during the first one and one-half hours following the taking of the glucose<sup>8</sup>. From one and one-half hours to three and one-half hours the blood sugar recedes to normal. Coincident with the blood sugar findings there may be a glycosuria. Blood and urine specimens should be taken every thirty minutes for four hours. For practical purposes this test can be modified to the injection of 100 grams of glucose and the determinations carried out as described. This procedure is without question a valuable one in dealing with the alimentary or renal type of glycosuria, or in the border line case, in which it is doubtful as to whether the patient should be strictly dieted or allowed a moderate range of freedom.

It is my firm belief that fewer cases of diabetes would be overlooked if the physician availed himself of the glucose tolerance test. I candidly admit that I have utilized this test very little during the past four years, in dealing with a considerable number of diabetics. At present I have three cases under dietary management, who are excellent subjects for this test. I do, however, employ the blood sugar determination and the twenty-four hour urine specimen extensively. In our clinic all suspected cases of diabetes get frequent blood sugar determinations. For the past two years I have personally done all the blood sugars. We employ the original Folin-Wu method.

#### RENAL DIABETES

Renal glycosuria or renal diabetes is intended to designate a condition of either normal renal threshold with a hyperglycemia of the blood or a low renal threshold with a normal blood sugar<sup>9</sup>. In either instance glycosuria may occur. The normal renal threshold lies within the limits of 160-180 mgs. A case is recorded wherein the blood sugar rose to 350 mgs. per 100 c.c. of blood during an ether anesthetic, yet no sugar was found in the urine. There can be no doubt but what some normal individuals possess an increased permeability of the kidney to sugar. The term, renal diabetes should be used with caution. Only after repeated blood sugars, twenty-four hour specimens and tolerance tests is one justified in making a diagnosis of renal glycosuria.

The following case illustrates very well a glycosuria, probably intestinal or renal, but nevertheless meriting close observation over a long period of time<sup>7</sup>.

A white male, age 9, always well and healthy and the son of a physician, develops a quite noticeable polyuria. Single specimen of urine following his usual meal reveals one plus sugar. Twenty-four hour specimen reveals slightly less than one-plus sugar. Single fasting specimen, negative. Blood sugar, fasting, 96 mgs. per 100 c.c. blood. No other symptomatology. Family history negative. The boy is placed on a moderately restricted diet and repeated specimens of urine are sugar free. There is also a definite improvement in the polyuria. Apparently this case is one in which there is a spilling over only at the height of digestion. In this instance correction of diet is the solution. The glucose tolerance test while indicated has not as yet been done. I am of the opinion that this patient deserves close observation throughout his life.

#### THE DIFFERENTIAL DIAGNOSIS

The differential diagnosis usually presents few difficulties. It is only necessary to bear in mind those conditions which give rise to glycosuria but have only in few instances a direct association with diabetes. Alimentary glycosuria and renal glycosuria have previously been discussed and need no further elaboration here. The well known discovery of Claude Bernard, that puncture of the floor of the fourth ventricle gives rise to glycosuria is of more academic interest than of clinical importance<sup>10</sup>. Griffin and Bowles in 1923 showed a fairly consistent association of diabetes with pernicious anemia<sup>11</sup>. Starling has produced potential diabetes in animals by the action of phloridzen<sup>12</sup>. Apparently, the drug gives rise to an increased permeability of the renal epithelium.

Generally, it may be said that glycosuria may occur in case of altered function of the island of Langerhans in the pancreas, hyperactivity of the suprarenal glands, hyperactivity of the thyroid gland, or of the posterior lobe of the hypothesis<sup>8</sup>.

One might ask, why or in what way does hyperthyroidism affect carbohydrate metabolism? It is a well established fact that glycosuria is frequently encountered in the thyroid patient<sup>7</sup>. This is explained by the action of thyroxin on the liberation of glucose from the liver. It produces a hypersensitiveness on the part of this organ, thus converting glycogen into glucose more rapidly than normal. The glucose is piled up in the blood stream and spilled

over into the urine. Rises of five or ten per cent have been observed in toxic patients. It is obvious that unless an abundant supply of starch is taken by the individual suffering from thyrotoxicosis, the glycogenic store in the liver will be depleted and a subsequent hypoglycemia will occur.

The exact reverse of this condition is found to occur in hypothyroidism, myxedema or cretinism. Many of these cases carry a blood sugar as low as 60 mgs. per 100 c.c. blood<sup>3</sup>. In Addison's disease hypoglycemia is a most consistent finding due to the depletion of epinephrine. In hypopituitarism we usually encounter a state of hypoglycemia. This depends somewhat upon the lobe involved and whether there is an associated thyroid factor. Hyperpituitarism, involving the posterior lobe of the pituitary, i. e., acromegaly and correlated states of over activity have a tendency to produce a hyperglycemia. Cushing and his co-workers have established this important fact<sup>4</sup>. The action of this mechanism is such that the patient might be incorrectly diagnosed as a diabetic. The action is analagous to a true insulin deficiency in severe cases. These posterior lobe hyperactive cases are probably normally supplied with insulin but the over-secretion of the posterior lobe is antagonistic to its action thus preventing its maximum activity in tissue glycogenolysis. Such cases are then not in any sense true diabetics. Treatment of the pituitary condition whether it be one of hypo or hyper dysfunction invariably clears up the glycogenic disorder.

Of considerable interest to the surgeon is the affect of ether and chloroform anesthesia on carbohydrate metabolism. It has been demonstrated that patients under ether anesthesia have had a rise in blood sugar of seven to eight mgs. of glucose per 100 c.c. blood for every ounce of ether administered. Trumper and Cantarow<sup>5</sup> report cases in which the blood sugar has attained the height of 400 mgs. per 100 c.c. blood during the course of a prolonged anesthetic. It is thought that the creation of a temporary acidosis by ether, inhibits the action of insulin, thus bringing about this rise. The degree of rise in blood sugar depends upon the duration of the anesthesia, the amount administered and to a lesser extent upon the individual's reactivity to ether. In those cases followed by blood sugar determination during the course of an anesthetic the blood sug-

ar has been found to fall to normal or to somewhat below normal within twelve to fifteen hours with no untoward effect to the patient.

Asphyxia<sup>6</sup>, due to the production of a state of acidosis markedly inhibits the effect of insulin on tissue glycogenesis, thus creating a rapid rise in blood sugar with a subsequent glycosuria.

It is only through a thorough understanding of acidosis, that one is able to appreciate the mechanism at play in the insulin fast patient. It requires the equivalent of 60 gms. of carbohydrate to burn up the fat in the process of digestion and assimilation<sup>7</sup>. Therefore in the case of the diabetic where there is little if any available carbohydrate, these ketone bodies pile up in the body. There is as a result of this a calling on of the alkali reserve; acidosis or ketosis is the end result. For this reason in balancing a diet the ketogenic-anti-ketogenic ratio must be considered. Insulin has an optimum affect at a p. H. 6.5. The p. H. of the blood is normally 7.32. One can readily see that in case of acidosis the maximum effect of insulin is not achieved. This fact readily explains the large doses often required for the coma patient.

The differential diagnosis of coma rarely causes difficulty. Of course hypoglycemic shock is important and is often confusing clinically. Of lesser importance are uremia, cerebral hemorrhage, diabetes insipidus, meningitis and chloral and morphine poisoning<sup>2</sup>.

#### CASE REPORTS

The following case illustrates some of the confusing problems which arise in diagnosis<sup>8</sup>.

A Jewish woman, age 60, was admitted to the medical service of the Peter Bent Brigham Hospital, Boston, 1927. She was apparently in profound coma. She was extremely adematous. Urine revealed four plus sugar, two-plus albumen and was loaded with hyaline and granular casts. Blood sugar, slightly above 300 mgs. Blood urea nitrogen 56.0. Treatment was instituted for diabetic coma. Recovery was slow. However, she was released six days after entry definitely improved. Seven days after this admission she was re-admitted in coma, again markedly edematous and died in a few hours, in spite of all measures. Was this patient primarily diabetic or renal? Eye grounds ex-



amed at first entry revealed an extensive albuminuric retinitis. A diabetic retinitis was not recorded. Post mortem was not obtained.

A case of diabetic coma with asthenic uremia is reported by Marchbanks and Graham in November, 1932<sup>12</sup>.

A rather confusing case was admitted to the medical service of the Kansas City General Hospital in January, 1913. A white male, age approximately 60. He was in a state of coma on entry and was placed on energetic treatment. The urine revealed four-plus sugar. Blood sugar 316 mgs. He showed a very poor response to all measures employed. This patient gave a history of known diabetes of about four years duration. He showed persistent albumin and casts in the urine with a non-protein nitrogen persistently above normal. The eye grounds were suggestive of albuminuric retinitis. He had a carbuncle on the back of his neck that showed practically no improvement after thirty days treatment. He at no time carried a normal blood sugar. The urine was seldom sugar free. Hypoglycemic reactions were frequent.

This case unquestionably was one of arteriosclerosis and chronic nephritis, as well as diabetes. As to which disease played the major role is difficult to say. The high incidence of arteriosclerosis and nephritis in the older diabetics is well known.

#### SUMMARY

The diagnostic criteria of diabetes are relatively simple if the physician will avail himself of them. It is probable that diabetes is not on the increase, but rather is being better diagnosed than formerly. A better conception of this disease is gained if we review the physiology of carbohydrate metabolism. The urinalysis is without question the important factor in making a diagnosis yet other facilities, namely the blood sugar, the glucose tolerance test, history and clinical examination are safeguards against the pitfalls that can easily be avoided.

Disease of the thyroid, the suprarenals, the pituitary and the pancreas, is capable of giving rise to glycosuria. The benign glycosurias are open to question as to the role they play in carbohydrate metabolism. It seems that there is little to gain from a study of the pathology of the pancreas. Further endeavor in this field may yet throw more light on the etiology. Con-

fusing cases from point of view of diagnosis are more the exception than the rule.

#### CONCLUSIONS

1. Diabetes is at present diagnosed more frequently than a decade ago.

2. The urinalysis does not give a true index to defective carbohydrate metabolism.

3. The pathology of the pancreas is of minor significance in diagnosis.

4. The history, clinical examination, blood sugar and occasionally the glucose tolerance test are indispensable aids to correct diagnosis.

5. Glycosuria is almost predominantly associated with dysfunction of four glands of internal secretion, namely, the pancreas, the thyroid, the pituitary and suprarenals.

6. The diagnosis of alimentary glycosuria and renal diabetes should be made only after exhaustive study.

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#### DIABETES IN CHILDHOOD

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Diabetes is one of the oldest of recorded diseases. Its symptoms were described in the Ebers Papyrus about the time of Moses. It was named by Araeteus who likened it to a syphon, hence we get its Greek name, Diabaino. Paracelsus performed the first chemical experiment in that he found the evaporated urine con-

tained sugar. The ancient Hindus noted the sweet taste of the blood and urine, but through Willis it was brought to the western world. The distinction between diabetes insipidus and mellitus was called attention to by Darwin in 1778, and so on in the evolution of its present knowledge.

But the knowledge so gained has had no practical bearing on the treatment of the diabetic patient, especially the children. A child being so afflicted was doomed to an early and sure death. The younger the patient the shorter the duration of life, hence the clinical observation of cases then presented the coma picture, for the child did not live long enough to have the many complications which a child so afflicted now has. The final picture was noted in a slowly developing non-livid coma. The paucity of the cases in early literature is also a matter of wonderment, as Pavy reported eight cases under ten years in 1860, and Prout one child in seven-hundred cases, while Priscilla White reports seven-hundred fifty cases in Joslin's clinic.

So it is now more common than is generally supposed. The disease itself has risen in mortality statistics from twentieth place to tenth place at present, and then the alertness and intelligence of the physicians today may have something to do with diagnosing more cases. Many cases are overlooked because it was commonly believed to be a disease of late adult life, and rarely occurring in infancy or childhood. "The number of cases of diabetes with onset in childhood parallels the number with onset in old age, i. e., there are as many children who have diabetes before they are ten, as there are men and women who have onset after they are seventy." Sixteen per cent of these juvenile cases had onset of the disease under the fourth year of age.

The ages of greatest incidence are the same as those of greatest growths, i. e., six to eight, and twelve to fourteen years. This may give some reason to think that the endocrines may be a causative factor, especially those having to do with growth and maturity. The sexes seem to be about equally afflicted in childhood, yet in adults, women have been found to be affected more than men. The diabetic girl matures later than her non-diabetic sister, and if not properly managed after the catamenia is established, she will quickly notice an absence of her regularity. The

male diabetic often loses his libido. "Diabetes in infants one year of age is rare, and even with the addition of their own cases, Joslin and White collected but thirty-one cases." Congenital diabetes is practically unknown.

Why do you stress the case of the diabetic child? The reason is very obvious that because with the discovery and practicability of insulin by Banting in 1922, it has given a method of handling these patients which has been the outstanding contribution to medicine that has occurred in my lifetime. In eleven years it has snatched these children from a certain death in from six months to two years, to strong vigorous youngsters, normal in weight and mentality. The well treated children grow as fast and mature as normally as their siblings, collaterals, friends or relatives who are not so handicapped, and to watch the growth and well being of these youngsters as compared to the utter hopelessness of the former management, makes me exult in the fact that I am a physician and see the effects of this magic touch to one so afflicted.

Now diabetes in childhood has a different underlying pathology of the pancreas than in the older diabetic, and the pathological changes in the islands of Langerhans are very few. Warren<sup>3</sup> claims the lymphocytic infiltration is the most characteristic lesion. He claims in most cases the islands are normal from a qualitative standpoint as well as normal in numbers and histology, and most important of all, the children should have advantage of the regenerative powers and stage a comeback more than the adult. Boyd also stresses this fact. The pancreas has regenerative power not unlike that of the liver, the histological findings of normal B islet cells show certain granules when normal, and disappearance of those granules when the gland is fatigued. Warren says, "perhaps the simplest physiological analogy of the pancreas in diabetes would be the thyroid in myxedema, yet in the thyroid cells no such anatomical change develops." In the adult or senile diabetic the pathological changes may be so great that it causes the pathologist to wonder why the gland functions at all. The islet glands of the pancreas begin to function about the fourth month of the embryo, long before the acinous glands begin to take up their activity. This has given current to a theory that the pancreas of a foetus of a pregnant diabetic



assists in furnishing the insulin to a mother during the latter stages of her gestation, and increases her ability to metabolize carbohydrates, a theory which has not held good in our clinical experience. It is a fact however, that the new born most always dies soon after delivery in a state of hypoglycemia because the excessive load is taken off the hypertrophied pancreas causing a profound hypoglycemia unless carbohydrates are generously given it at first. (Hyperinsulinization).

Now let us see why one child develops diabetes and another does not, or why the potential diabetic? The basis on which inheritance rests is bound up in the chromosomes, which are bearers of hereditary factors or genes. Dominant factors may be brought out in mathematical accuracy, while recessive characters on the other hand, may be potentially present in a given stock for generations, and never be manifest. Doctors Joslin and White<sup>4</sup>, in order to answer this question of eugenics have made this dogmatic statement, "if a diabetic marries a non-diabetic with a diabetic heredity, half of the children should develop it; if two non-diabetics, but each hereditarily predisposed to diabetes marry, one-fourth of the children should get it; but if a diabetic marries a non-diabetic who is without a diabetic heredity, no diabetes should appear in the offspring." In other words diabetes is recessive rather than dominant. This observation has become manifest since the use of insulin because it lengthens the lives and makes them more normal. This prolonging life has also allowed the more searching family history, so that Joslin has found the element of heredity in fifty per cent of his children. Oliver Wendell Holmes says that we are all omnibuses in which all of our ancestors ride.

When one considers the noninfectious nature of diabetes, the occurrence of the disease in twins, identical and fraternal, it points to a hereditary background or to some congenital liability to functional failure in the islands of Langerhans, then it strengthens our point. Curtis<sup>5</sup> claims that in the recessive type it occurs more commonly before the age of forty, is generally grave at the onset, and tends to be self-extermi-native. The dominant type is more frequently encountered in elderly people, and almost invariably is mild and does not materially affect the general health.

Curtis in the study of thirteen sets of identical twins found that quite a few developed diabetes, almost simultaneously, even though reared apart and under different conditions, and adds that when one develops diabetes, the other should be carefully watched so as to not strain his carbohydrate metabolism, in other words, he is a potential diabetic.

"Superiority is more characteristic of the potential diabetic child than is defectiveness<sup>6</sup>." At the onset of the disease the diabetic child is precocious, it takes great interest in its trouble, and glories in the fact that it can compute its diet, and want to help others in arranging their diet. "His physiological and roentgenological ages are more than twelve months in advance of his chronological age, and his mental development is above the average by six months." He is taller of stature than his siblings or collaterals, he matures and develops in a normal manner, holds his own in classroom and sports when properly treated with adequate nourishment, and sufficient and well spaced insulin. What height is to children, obesity is to adults as potential factors in diabetes.

The baby born to a diabetic mother is nearly always a large baby, weighing over eight pounds, and it is found that cesarean section is the method of delivery in primipara being attended with less hazard to the baby and with less shock and danger to the mother. This has been our experience, and all recent literature, both of obstetricians and internists, bears out this fact.

As to racial predisposition, Priesal and Wagner found that twenty-seven per cent of their cases in one-hundred eight diabetics, with onset in childhood had hereditary tendencies, and that this heredity was forty-three per cent in Jewish children as compared with twenty-one per cent in Gentiles.

"It seems to be well accepted that diabetes even in a fulminating form can follow infectious diseases, such as typhoid fever, scarlet fever, influenza, etc. This has recently been emphasized by Williams and Dick<sup>7</sup> in the McCormick Institute for Infectious Diseases in Chicago, claiming that in infectious and contagious diseases half the patients will develop a glycosuria if given enough glucose. Likewise in experimental infections in animals, a similar transient glycosuria is produced. This is

accompanied by an increase in the blood sugar concentration while fasting, and by alterations in blood sugar curves as shown by dextrose tolerance tests in animals." Geyelin<sup>8</sup> reports eight cases of five weeks duration following infection. White<sup>9</sup> in a study of one hundred diabetic children, found only two who did not have a history of an acute infection preceding the onset of diabetes. True it is that potential diabetic or low grade diabetic will be made much worse during an acute infective disease, even so much as a common cold, and insulin will have to be increased during that period. But when once diabetes is established then infections have a profound effect on the lowering of sugar tolerance, production of ketones and possibly coma, and the likelihood of running a riotous course, so these unfortunates should be carefully handled during the common colds, sore throats and boils, and insulin dosage increased, but let the infection be removed by the crisis of a pneumonia, the removal of a bad appendix, or amputation of an infected gangrenous arm or leg, and the dosage of insulin needed will fall dramatically and return eventually to a preinfective stage. There is no such thing as insulin fast cases, i. e., where insulin in proper dosage is not effective, but in the presence of pus or bacterial infections the dosage may have to be increased to where you shudder at the amount. Let me remark here that the shortage of glycogen in liver and muscles will be depleted so that hyper and hypoglycemia may be present in very short space, necessitating a much closer scrutiny of your patient during those trying times.

Bowman<sup>10</sup> in his article deduces: 1. Heredity plays little part in etiology; 2. That the appearance of the diabetes usually follows an acute illness such as scarlet fever, measles, mumps, or cystitis.

The development of diabetes in children is associated with a more definite time than in adults, often it comes on with sudden onset without any premonitory symptoms, but, as it were, springs full blown into existence, again it may come on more insidiously and the child is noticed to be losing flesh, is less active at play, urinates more frequently and copiously. There may be an associated increase of appetite and desire for water. This early observation may be due to the careful supervision of a mother or nurse. The child is taken to its physician, who ex-

amines its urine and finds sugar or possibly acetones and diacetic acid. A further study of the blood sugar while on its accustomed diet, shows an increased amount of glucose above 120 mgm. per 100 c.c. of blood. A further study may show that the sugar curve after a meal of glucose, rises to a higher point and does not come back to its level of the fasting stomach in three hours when measured at hourly intervals. This is a questionable procedure however. The child is observed while put on a maintenance diet of possibly two or three grams of proteids, per kilo of body weight with the carbohydrate ratio of 1.5 gms. per kilo and fat to make up forty calories per kilo. Should the child continue to spill sugar on this diet, we find the amount of glucose in the two twelve hour specimens of urine, and start with insulin computing one unit of insulin will care for two grams of glucose. Or by the method of trial and error we use 5-15 units of insulin before meals, gaging the amounts on the size of the patient and on the reduction of the Benedict's solution, whether red, yellow or green. We find the larger dose of insulin needed before breakfast, as the previous day's insulin has been destroyed, during the night. In severe cases or in those who have depleted their glycogen reserve, it is even necessary to give a dose at night, with the food carefully weighed and the insulin properly spaced, and dosaged, and the patient is soon rendered sugar and ketone free.

Exercise should be as carefully dosaged as diet, as exercise causes insulin to be more effective than at bedrest. On rainy days with quietude in the house, the patients need more insulin than on bright days when they can romp and play. This is a point that cannot be too much emphasized. A run around the yard before breakfast and the engaging in moderate exercise will assist immeasurably in the efficiency of insulin. In fact I have seen many insulin reactions occur from too much muscular activity on the same diet, and insulin, that had formerly been safely tolerated.

Emotional disturbances, next to exercise have to be computed as a disturbing factor in sugar metabolism, for it lessens the ability to store glycose, possibly due to the effect of the suprarenal secretions on the pancreas. The proper care and guidance of an intelligent mother or nurse with suitable nervous hygiene bespeaks cooper-



ation of the child and presages a happy outlook, especially up to the school age, and even then the early training has much to do with the adherence to a proper regime when away from her. The fool always dies young. These patients should be encouraged to live a normal existence and not be obsessed with the idea that they are different from other children, and bound by limitations of physical or mental exertions. One of my boys is a star player on a basket ball team and there is nothing effeminate about him.

Now with the diagnosis of diabetes established it behooves them to stick with the treatment assiduously one day after another, because a well treated case in the youth generally increases tolerance from week to week and the possibility, nay even the probability, of his getting to the point of going without insulin and even eating more liberally is to be held as an incentive. However, going on sugar sprees or leaving off insulin even for a short while will most likely lower his sugar tolerance, possibly precipitate coma, and make him worse for quite a while, laying him open to many complications which are in store for an inadequately treated case.

The first complication which we shall narrate is the most common and most dramatic, and that is coma. Uncomplicated coma is preventable and curable in the juvenile, but it increases in gravity and lessens in incidence in adolescence until it attains a fifty per cent mortality in the quinquennium". Of the total number of comas treated in the hospital, children represented 89, and of these there was but one death. What a contrast to the period prior to the discovery of insulin, when all diabetic children died of coma. Forty-four ( $\frac{2}{3}$ ) of Joslin's cases who have died outside his hospital have died of coma. There are more deaths under ten years of age, while in the second decade the mortality was only three per cent in comparison with 13.1 per cent in the whole series. Ten to twenty per cent of diabetic children have coma at one time or another, so one must be continually on the watch for it. Complicated coma such as is brought on by acute infectious diseases, boils, colds and pus infections, is more serious and demands more constant attention with some one person to direct and guide the management, not unmindful of his responsibilities, nor leaving his patient until the coma has been relieved. Joslin's trained crew for the care of this

complication is ideal, but I have even seen a lone physician in the country stay with his patient until he was out of danger.

Gottschalk of Stettin demonstrates that hospital admissions for diabetic coma can be reduced to zero in a city of 270,000. This took educated and trained families as well as physicians. In managing a case of coma, conserve body heat by blankets, dehydration is then to combat, normal salt solution either intravenously or by hypodermaclysis or intraperitoneally and repeated until possibly 6000 c.c. in twenty-four hours are given, lavage of stomach because of the dilatation and vomiting, enema to cleanse the rectum, insulin given according to reaction of urine to Benedict's solution at one-half to two hour intervals, five to forty units after hourly tests, or to blood sugar estimation, sugar to be given if urine scant or as a buffer for insulin. No alkalies. Cardiac stimulants are rarely needed in children, but adrenalin or ephedrine if there is circulatory failure. Intravenous fluid given slowly and freshly triple distilled water in clean apparatus with glucose out of freshly opened ampoules.

Coma must be contrasted with insulin shock and surgical abdomen, most likely appendicitis.

Coma has a slow onset. Insulin shock rapid. Coma due to dietetic error, infection or lack of insulin. Insulin shock due to too much insulin, too little diet, or too much exercise.

Coma, skin dry and florid, insulin shock, moist and pale.

Coma, Kussmaul's breathing, i. e., hyperpnaeic, non livid air hunger. Shock breathing, normal or shallow.

Coma, pulse weak and rapid. Shock, is full and bounding in spite of collapse.

Coma, vomiting preceding unconsciousness, abdominal rigidity and distension. Shock, vomiting rare.

Coma, convulsions rare. Shock, convulsions and bizarre nervous phenomena the rule. Sehested<sup>13</sup> states that in insulin shock, particularly in actual unconsciousness, the Babinski signs are frequently positive on one or both sides. He has never found a positive in diabetic coma, nor seen a statement to that effect. Joslin claims to have not found it in either condition.

Surgical abdomen as appendicitis may

precipitate and complicate coma, both have leucocytosis and polynucleosis, both vomit, both have tender rigid abdomen, and your diagnostic acumen will be taxed to its limit.

The indirect complications of diabetes as arteriosclerosis, cataract, etc., are not present in adequately treated cases, but come on in children when they are not carefully handled and do not cooperate with the management. Hence age does not negate these indirect complications.

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## DIABETES MELLITUS AND ITS RELATION TO VASCULAR DISEASE

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The relation of diabetes to vascular disease, or if you prefer, diabetes complicated by vascular disease, is perhaps the most important problem confronting the diabetic. Today the greatest single cause of death in diabetes is arteriosclerosis in all of its ramifications. The diabetic population has a higher percentage of arteriosclerotic complications and develops them at an earlier age than do non-diabetic individuals. Since the advent of insulin and the knowledge pertaining to its use, death from coma in the absence of an infection can be almost entirely prevented by the intelligent co-operation of patient and physician. As result these people live longer, thus allowing them time for the development of vascular disease and projecting more of them into the age period when vascular disease is prone to develop.

#### ETIOLOGY

Obviously a final answer to the question

of etiology will depend upon the solution of the ultimate cause of uncomplicated arteriosclerosis. Why it occurs so much more commonly in diabetes is still unknown. There have been attempts to correlate it with obesity, hyperglycemia, and acidosis. No adequate proof has been adduced to support any of these contentions. Perhaps the most promising field of investigation at the present time is into the disturbed fat metabolism with its elevated blood fat and blood cholesterol. We know that arteriosclerosis can be produced experimentally by feeding a diet high in cholesterol and we know that diabetics carry a hypercholesterolemia and the possibility of a causal relationship must be considered.

#### INCIDENCE

We know that arteriosclerosis occurs more commonly in men than in women. Although this is also true in the diabetic the difference is a comparatively small one. Particularly is this equalizing influence of diabetes seen in the case of coronary sclerosis. The age incidence of arteriosclerosis is also an interesting study. In the general population the incidence of arteriosclerosis increases with age. In the diabetic, not only is this true, but arteriosclerosis also increases with the duration of the diabetes. As a general rule, regardless of the youth of the patient, a diabetes of five years or more duration will produce arteriosclerosis. The longer the duration of the diabetes the more extensive will be the arteriosclerosis and the higher will be the percentage of deaths due to some form of arteriosclerosis.

#### CORONARY DISEASE

Of all the arteriosclerotic deaths in diabetes heart disease accounts for the greatest number. There are two main types: (a) coronary sclerosis with or without infarction, and (b) hypertensive heart disease. Of these coronary disease is by far the more important. Coronary disease has a much higher incidence in the diabetic than in the non-diabetic. Nathanson<sup>1</sup> in an analysis of one hundred autopsies on diabetics found severe coronary disease in 41% of diabetics of all ages, and in 52% of diabetics over the age of fifty, as compared with 8% in his control series. These figures include coronary thrombosis, coronary sclerosis with myocardial insufficiency, and asymptomatic cases. Warren<sup>2</sup> found that 12% of his series of autopsied diabetics died of coronary thrombosis. Root<sup>3</sup> in a pathological study



based on 80 autopsied diabetics found coronary sclerosis present in some degree in every individual who had had his diabetes five years or longer. Coronary thrombosis, including old and recent infarction was found in 25%. Blotner<sup>4</sup> has a similar series of 77 fatal cases of diabetes. He found that 35 showed well marked disease of the coronary arteries, eight died of cardiac infarction, and 33 died of some type of arteriosclerotic heart. In the 35 cases of coronary sclerosis demonstrated pathologically a definite hypertension was present in 15. Expressed in a different way, Nathanson found that of 24 autopsied cases of coronary thrombosis six were diabetics. In Levine's<sup>5</sup> series of 145 cases of coronary thrombosis, diabetes contributed 34 or approximately 25%. In the general population the incidence of coronary disease in males and females follows approximately a 4:1 ratio. In diabetes there is a marked leveling influence so that the ratio is approximately 3:2. A rather interesting point brought out by Nathanson<sup>1</sup> is that diabetics with gangrene have a higher incidence of coronary disease than other groups. There appear to be two precipitating causes of coronary thrombosis peculiar to diabetes—namely acidosis and insulin hypoglycemia.

The signs and symptoms of coronary disease are no different in diabetics than in others and it is beyond the scope of this paper to discuss these points. However, I believe that some discussion of treatment is worthwhile. Ordinarily in treating a diabetic we desire to keep him sugar free and to keep the blood sugar in the normal or near normal range. However, in treating arteriosclerotic diabetics and especially in this exemplified by the patient with coronary disease, this theoretical ideal must be radically altered. These patients have become accustomed to and require a blood sugar at a higher level in order to function properly. If we subject the heart with diseased coronary arteries to an artificial lowering of the blood sugar it may respond with angina or signs of myocardial weakness. Similarly the arteriosclerotic brain will respond with a wide variety of mental symptoms. Coronary thrombosis has been reported in a number of instances immediately following an insulin injection suggesting an etiological relationship. Anginal attacks would seem to be easily explained; actual thrombosis would be more difficult to ex-

plain. Treatment of the arteriosclerotic diabetic must be highly individualized. Many do satisfactorily untreated because of the mildness of the diabetes. The majority can be handled with diet alone. When insulin is necessary it should be used with great care, the patient should be kept under close observation, and the urine and blood closely followed. Insulin therapy should be started with small doses gradually increasing if necessary. For each one of these patients the blood sugar level should be found which will allow that patient to function at his best. This level will usually be in the neighborhood of 160-180. Almost all of these patients have a high renal threshold and consequently can be kept sugar free even with a high blood sugar. The following table summarizes the pathological findings regarding coronary disease in the diabetic.

	Autopsies	Per Cent of Severe Coronary Disease	Per Cent of Coronary Thrombosis	Deaths From Heart Disease
Blotner	77	45	10	43
Nathanson <sup>1</sup>	100	41		
Root	80		25	
Warren	282		12	
Total	539	43	14	43

#### GANGRENE

Gangrene is another important manifestation of vascular disease in the diabetic. The causes of the vascular disease are the same in the diabetic as in the non-diabetic, but their relative frequency will differ. The great majority of cases of diabetic gangrene are secondary to arteriosclerosis. Some authors attempt to differentiate diabetic from arteriosclerotic gangrene but I believe that evidence for such a difference is poorly founded and that the consensus of opinion is against such a distinction. However, it is true that diabetics nearly always have the wet type of gangrene while the purely arteriosclerotic individual is more likely to have the dry type. This may be due to the high sugar content of the diabetic tissues favoring infection rather than a difference in the vascular disease itself. Evidence of disturbance of the circulation may be found in 15-20% of diabetics. Such patients are in imminent danger and careful prophylactic measures should be instituted. Approximately 6% of diabetics have gangrene, and it is a contributory cause in 20-25% of all diabetic deaths. Embolic gangrene and Buerger's disease also occur in the diabetic but are relatively unimportant. The treatment of gangrene is surgical amputation in nearly

100% of cases. The operative mortality is still high especially when the process is spreading. The life expectancy of the diabetic even after recovery from an amputation is only 2-3 years so that at best the prognosis is poor<sup>7</sup>. On the other hand a great deal can be accomplished in a prophylactic way with an intelligent patient. I believe that every diabetic should be instructed in the care of the feet. The starting point in most cases of gangrene is an apparently insignificant injury or infection. Ill fitting shoes may cause blisters and must not be tolerated. Corns should never be cut by the patient. Ingrown toenails should be treated by the physician. Cases of epidermophytosis should receive careful attention despite their seeming harmlessness. And perhaps most important of all, the feet should be kept scrupulously clean and shoes as well as stockings should be frequently changed. With such simple measures as these great inroads could be made into the present morbidity and mortality from diabetic gangrene.

#### HYPERTENSION

In using the term hypertension I am referring to so-called primary or idiopathic hypertension secondary to or at least co-existent with arteriolar disease and excluding hypertension secondary to known causes such as true nephritis, aortic insufficiency, hyperthyroidism, etc. Used in this sense we may regard hypertension as a compensatory building up of hydrostatic pressure to force blood through diffusely narrowed arterioles. There are three different, although frequently associated manifestations of the hypertension state—(a) congestive heart failure, (b) cerebral hemorrhage and, (c) arteriolar nephrosclerosis. Hypertension occurs more frequent in the diabetic. John<sup>10</sup> states that up to the age of 50 hypertension is no more frequent in the diabetic but that above 50 its incidence becomes progressively greater. Adams<sup>9</sup> in an interesting clinical study compared 1001 diabetics at the Mayo Clinic with a series of controls consisting of both accepted and rejected life insurance applications. He found that the diabetic was six times as likely to have a diastolic blood pressure above 100. On the other hand he was about 6-7 times as likely to have a low blood pressure. Using averages he found no significant difference between the two groups illustrating the fallacy into which averages can lead. Bell and Clawson<sup>11</sup> in a clinical-pathological study found that in a group of

70 diabetics of all ages who came to autopsy 19 had either clinical or pathological evidence, or both, of hypertension; and in the same group, of the 40 who died over the age of 50, 17 had had hypertension. They also collected from the literature the records of 2486 diabetics of all age groups and found that 22.3% of this group had hypertension (systolic pressure over 150). Of this same group, 583 diabetics over the age of 50 showed an incidence of hypertension of 41.4%. Control series obtained from the general population show an incidence of 7-15%. Accepting the higher figure for the control group it means that hypertension is 2.7 times as common in the diabetic over 50 as in the non-diabetic. The diabetic with hypertension also has sclerosis of his coronaries to a greater or lesser degree and this is a formidable combination. In a case seen for the first time controlling the diabetes will usually cause a definite and often a marked fall in blood pressure. Both the hypertensive and the diabetic individual are apt to be overweight and weight reduction will prove a marked benefit to both conditions. Again the treatment must be adapted to the individual. There are few situations in medicine where it is more important to remember that the patient and not the disease must be treated.

Cerebral arteriosclerosis is comparatively common in conjunction with generalized arteriosclerosis. About 5% of diabetic deaths are due to hemiplegia, i. e., thrombosis or hemorrhage. Although few diabetics become definitely insane, in many of the elderly diabetics minor mental symptoms such as forgetfulness, carelessness, dulling of the intellect, nervousness, eccentricities, etc., are quite common. Here, as in coronary sclerosis, the symptoms may be aggravated by lowering the blood sugar, through the overzealous use of insulin.

#### SUMMARY

1. Arteriosclerosis is considerably more common in diabetics than in the general population.
2. The incidence of arteriosclerosis in the diabetic increases with age and also with the duration of the diabetes.
3. Approximately one-half of all diabetics die of some form of arteriosclerosis.
4. Coronary disease, including sclerosis and thrombosis, is the most important



cause of death from heart disease in the diabetic.

5. Gangrene on an arteriosclerotic basis is an important cause of death in the diabetic. Prevention rather than cure is the avenue of therapeutic approach.

6. Hypertension, including the milder grades, occurs about 2.7 times as commonly in the diabetic.

7. Cerebral arteriosclerosis in its milder forms appears to be quite common. However hemiplegia and arteriosclerotic insanity occurs no more frequently than in the population as a whole.

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#### CHRONIC INTERMITTENT DUODENAL OBSTRUCTION

According to Howard F. Shattuck and Harry M. Imboden, New York, (*Journal A. M. A.*, March 19, 1932), chronic intermittent duodenal obstruction or ileus is generally accepted as a clinical entity. The two most frequent and important causes of the condition are, first, peritoneal adhesions or bands fixing the first and second parts of the duodenum, and, second, pressure of the mesenteric pedicle, or a sharp occlusive angle at the duodenojejunal flexure causing obstruction of the third part of the duodenum. The authors' study includes forty-six cases of this condition, eight of which came to operation. The symptoms are extremely variable and noncharacteristic but should suggest the possible presence of the real trouble in many instances and lead to careful roentgen study as a consequence. Accurate diagnosis depends largely on a careful and skilful roentgen study. The characteristic roentgen observations found in the various types are described. The great majority of these cases respond satisfactorily to medical treatment, but there is a small group with pronounced symptoms and marked roentgen observations which does best with conservative surgical measures.

#### DIETING THE MEDICAL AND SURGICAL ULCER PATIENT\*

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In no field of medicine has there been greater advance in therapy in the last three decades than in the treatment of gastric and duodenal ulcers. Both gastroenterologists and surgeons have participated in the improved methods of treatment that have resulted in the brilliant results that now may be expected to follow in the 80 to 90 per cent of ulcer patients who may be cured by dietary and medical management. In the remaining 10 to 20 per cent surgery should be curative except in a few of the neglected cases, and in a small proportion of the acute complications like perforations of the stomach or duodenum. Credit should be given also to nutritionists, most of whom are not physicians, who in their laboratory researches have unlocked, and placed at the disposal of the medical profession, secrets of metabolism and nutrition that perhaps represent the greatest achievement of the twentieth century for the good of all mankind.

The ulcer patient, whether medical or surgical, should have the benefit of what McCollum calls our "newer knowledge of nutrition". His diet should be adjusted to his particular needs, not only as related to the proper amounts and proportions of proteins, carbohydrates, fats and minerals; its vitamin content should also be balanced. In the medical management of ulcers of the stomach and duodenum a relatively high fat diet seems best to meet the indications for the treatment of the local pathological conditions; while food rich in vitamins will build up the general state of nutrition so that the ulcer will heal and the patient become more resistant to infections of the gastro-intestinal tract<sup>2</sup>.

It manifestly is not advisable to give the plethoric ulcer patient weighing 200 pounds the same diet as the undernourished 100 pound individual who happens to have an ulcer. The nutritional needs of the patient who has had a recent hemorrhage differ from those of the person who voluntarily leaves his work for ulcer treatment. The adolescent ulcer patient needs a relatively higher protein diet than the

\*Read by invitation before the Oklahoma State Medical Association, Oklahoma City, May 16, 1933.

adult after fifty, and in many other respects the personal equation cannot be overlooked in dieting ulcer patients.

These considerations seem to be lost sight of by most physicians in dieting their ulcer patients. There are almost as many diets employed in treating ulcers of the stomach and duodenum as there are clinicians specializing in gastro-intestinal diseases. Most of the diets which are used as a routine by the medical profession generally in treating ulcer patients, are modifications of the Lenhartz<sup>3</sup> diet, though they are given the names of various men who have popularized them. It seems to be the usual thing to try to make a diet fit all ulcer patients, instead of preparing daily menus to suit the nutritional needs of each individual case. In other words, it appears to be the rule that when a physician makes a diagnosis of ulcer, he gives his patient some one of the diets as published in text-books without considering the patient's age, weight and general condition, or even the variable pathological states of the ulcer-bearing stomach or duodenum.

*Faulty Routine Diets.* In giving these routine diets no thought seems to be given as to whether the patient is receiving an excess, or a deficiency, of protein, carbohydrates and fats; and but little regard is given to the vitamin content of food. These routine diets that are given indiscriminately to ulcer patients are not always harmful immediately, though some of them for the first week contain a dangerously high ratio of fats to carbohydrates. Most of them, after the second week, contain an excess of proteins and carbohydrates and a deficiency of vitamins B and C; hence untoward remote results may occur from their prolonged use. The least criticism that can be made of the practice of routine dieting in ulcer is that it is unscientific. It is almost as important that the dieting in gastric and duodenal ulcers should be arranged to meet each individual patient's need as it is in preparing the daily menus for the diabetic.

It must be admitted, however, that many ulcer patients will get well clinically on any one of the ulcer diets provided he rests in bed for three or four weeks. It also is unquestionably true that many ulcers heal spontaneously without any effort at dieting, or at least heal to the extent that there are remissions of symptoms for weeks and months at a time.

Nevertheless, a larger percentage of permanent cures of ulcers result when scientific methods are instituted for preparing daily menus suited to the nutritional needs of each individual patient.

*Small Frequent Feedings For First Week.* Partial physiological rest to the stomach and complete physical rest for the patient are important in the first two or three weeks in the treatment of ulcer. Lenhartz advised half-ounce feedings of an egg and milk mixture every hour from 7:00 A. M., to 7:00 P. M., increasing the amount by half ounce each day until, in six days, hourly three-ounce feedings are given. We think it better to consider the patient's habitual hours for meals and the feedings should be begun and ended about the time for his morning and evening meals provided his hours for eating do not need regulating. Eight o'clock being the average we usually begin the feedings at that hour and end them at seven in the evening. If the patient's vocation requires him to begin work early, the first feeding is at 6:00 or 7:00 A. M., and the last ten hours later.

Some of the modifications of the Lenhartz diet, notably that of Sippy<sup>4</sup>, begin with three ounces of food every hour. This would seem to overload the stomach, which accounts for the need of using the tube for aspirating the stomach contents during the night. Beginning with half-ounce hourly feedings for ten hours and increasing the quantity by half ounce each day, with a maximum of three ounces in six days, it is rarely necessary to employ the stomach tube at night, as is the practice in the Sippy treatment.

*The Use of Fats to Protect Ulcer.* Lenhartz gave a high protein diet to "bind" the acid secreted by the stomach on the theory that it prevented the irritating effect of the gastric hyperacidity upon the ulcer. Rehruess<sup>5</sup> has demonstrated that proteins do not bind the free hydrochloric acid in the stomach; but, on the contrary, his highest acid readings were after feeding proteins. It therefore would seem that Lenhartz's high protein diet in ulcer was based upon a mistaken conception of gastric function. Rehfuess' observations also seem to prove that the time-honored custom of prescribing meats, eggs and other food of high protein content, in gastric hyperacidity, should be abandoned.

In my original modification of the Lenhartz diet, first employed in 1906, Con-



heim's<sup>4</sup> theory of a deficiency of gastric mucus in ulcer was considered; and cream was added to the Lenhartz formula with the idea of keeping the ulcer coated with milk fat, thus protecting it from the irritating effects of the excess of hydrochloric acid usually present in the stomach contents of the ulcer patient. Conheim gave olive oil to ulcer patients, claiming that it promoted healing of the ulcer by protecting the exposed nerve terminals in the open ulcer. It seemed to me that milk fat would have the same effect.

Some patients objected to the raw egg mixture with the milk and cream mixture in our modification of the Lenhartz diet; and for the past few years we have been omitting the eggs. We find that the higher fat diet relieves the pain better than when the first few days' feedings contained eggs, and that the patient makes a more rapid clinical recovery. In 1906 we knew nothing about vitamins but it is known now that milk fat is rich in vitamin A, while there are no vitamins in olive oil. The addition of the cream to the milk, therefore, not only adds to the palatability of the food formula, but is soothing to the ulcer and increases the general nutrition of the patient.

*The Low Carbohydrate Diet in Ulcer.* Deeks<sup>5</sup>, in 1904, expressed the opinion that a diet excessive in sugars and starches is the most important etiological factor in ulcer, hyperchlorhydria and other gastric disorders. He, therefore, gave his ulcer patients a low carbohydrate diet and reported excellent results. Whether or not Deeks is right in his theory, all authorities on nutrition agree that the average American diet contains a great excess of carbohydrates; and since most patients develop ulcer on a diet rich in bread, sweets, rice and potatoes, it would seem advisable to change their eating habits. We, therefore, have followed the suggestion of Deeks in using a low carbohydrate diet in treating ulcer; and believe that we have been getting better results since adopting that method.

In giving a low carbohydrate, relatively high fat diet in ulcer it should be remembered that "fats burn in the fire of the carbohydrates;" and the ketogenic-anti-ketogenic ratio of Woodyatt, i. e., 1 of carbohydrate to 1.5 of fats (in grams) should be considered in dieting any individual. A higher proportion of fats may result in a mild acidosis, particularly if there is impairment of the islet function

of the pancreas, which, on account of the anatomical relations of the pancreas to the stomach and duodenum, probably is not infrequent in ulcers of the stomach and duodenum. The proportion of one-third carbohydrates to two-thirds fats by calories as used by us is not nearly so high a fat diet as the Marsh Newberger diet in diabetes. When translated into grams the ketogenic-anti-ketogenic ratio in our diets averages at least 1.5 of carbohydrates to 1 of fat. The Sippy diet for the first week, i. e., one and one-half ounces of cream and one and one-half ounces of milk every hour for thirteen feedings a day, would give 199 grams (1791 calories) fat, 24 grams (64 calories) carbohydrate, and 17.5 grams (70 calories) protein, a ketogenic-anti-ketogenic ratio of about 1 to 4. This is entirely too much fat to give in one day; too high a ratio of fat for even a normal person and a dangerously high fat diet for an individual with a damaged pancreas. We have had two cases of ulcer of the stomach in which the urine showed a high degree of acetone and diacetic acid, when the patients were consuming about one-fourth the amount of fat as in the first few days of the Sippy diet. It is probable that a high degree of acidosis would have followed in these patients had they received the routine Sippy diet for the first week.

*Proteins.* It would seem rational in dieting ulcer patients to give no more protein than is needed for daily nutrition. Chittenden's experiments seem to show that the normal adult needs only about one-tenth his total amount of food, expressed in calories, in proteins. Others, particularly the Germans, think a higher proportion is necessary, some ranging as high as one-seventh. It is generally agreed, however, among nutrition experts, that the average well-nourished person needs no more than 75 grams (300 calories) of protein a day. In estimating our diets for ulcer patients we give the average person over fifty years of age, 60 grams protein daily, while young vigorous adults are given 75 to 80 grams. While ulcer is rare in adolescence it does occur under twenty and, if so, 100 or more grams of protein may be given a day. After hemorrhage, or if the patient is anaemic, it is advisable to give 100 or even 120 grams of protein a day. The Lenhartz ulcer diet containing 120 grams of protein a day was originally intended for

use after hemorrhage and the results were so good that it was used by him and others routinely for all ulcer patients. In dieting the ulcer patient after a hemorrhage, we use our modification of the Lenhartz diet\* adjusted to meet the caloric needs of the individual under treatment.

*Diet for the First Two Weeks.* We begin the diet of ulcer patients by giving on the first day, one-half ounce (15 c.c.) of milk (two-thirds) and cream (one-third) mixture, and increase one-half ounce each day until in six days three ounces are given every hour from 8:00 A. M., to 7:00 P. M. The proportion of two parts of milk to one of cream is maintained in all the feedings for the first two weeks. One-half ounce of strained orange juice is given at 9:00 P. M., increasing the amount by one-half ounce each day until, in six days, three ounces are given.

From the seventh to tenth day the diet is still under the basal requirement. The three-ounce feedings are given every two hours instead of at hourly intervals, with the addition of four tablespoonsful of strained oatmeal, or one-half shredded wheat biscuit, or a thin slice whole wheat bread dry toast for breakfast and supper and one ounce scraped beef and one thin slice of whole wheat bread dry toast for dinner.

From the eleventh to the fourteenth day, the diet is increased by giving a soft cooked egg for breakfast and supper and increasing the scraped beef to two ounces or substituting minced breast of chicken for dinner.

*Basal Diet During Third Week.* Beginning the third week and so long as the patient is in bed, he is given his basal diet, unless he is underweight, then the amount of milk and cream is increased; or if he is overweight the cream is reduced so that his own fat will be burned. If he is anemic the proteins are increased.

The basal diet in calories is calculated by multiplying the body weight in kilograms by 25, the number of calories needed daily per kilogram of body-weight while the patient is at rest in bed. Thus the ulcer patient weighing 154 pounds (70 kilograms) would require 1750 calories a day. Of this, 60 grams (240 calories) should be of protein and the remainder (1510) should be divided into one-third (504 calories) carbohydrate and two-thirds (1006 calories) of fats; or

translated into grams, 128 grams of carbohydrate and 111.6 of fats.

If an increase in carbohydrates is desired it is easily made by adding to the basal diet enough milk sugar or bread to make up the required number of grams. If the fat requirement is higher or lower than the basal diet the cream or butter is increased or reduced; and if there is anemia, enough scraped beef and cheese are added to meet the estimated amount of protein for the patient's daily needs.

*Optimal Diet After Third Week.* Beginning when the ulcer patient has completed his three weeks' rest in bed his optimal diet should be given, i. e., the amount needed to maintain his strength and his normal weight while attending to his daily duties. The amount needed depends upon the amount of physical exertion performed in the day. It is estimated that the average business or professional man, or the housewife, requires about 35 calories per kilogram of body-weight. Thus the optimal diet for the adult of average height and weight, 154 pounds (70 kilograms) would be 70 times 35—2450 calories. Of this, 10 per cent., 245 calories (61 grams), should be proteins and of the remaining 2205 calories, one-third, 735 calories (183.5 grams), is carbohydrate and two-thirds, 1470 calories (163.3 grams), in fats.

The laborer employed in hard work will require about 50 calories per kilogram per day. Thus the brick-layer, or the farmer, or the golfer who plays eighteen holes a day will need about 3500 calories, divided as follows: 10 per cent., 350 calories (87.5 grams) protein and of the remaining 3150 calories, one-third, 1050 calories (262.5 grams), in carbohydrate and 2100 calories (233.3 grams), fat.

The ulcer patient's optimal diet should be continued for a year or more. It is not necessary for him to weigh and measure his food as may be done if he is in a hospital, but during his fourth week of treatment, he may be taught to estimate his diet so that he may order a meal in a restaurant or at home, containing approximately the proper amounts of proteins, carbohydrates and fats. It is not possible even when food is weighed and measured to tell exactly the number of calories of protein, carbohydrates and fats that some items contain, and since the organs concerned with digestion and nutrition normally have a wide range in



function an error of 300 or 400 calories a day is not of moment.

The ulcer patient should weigh himself once a week. If he gains above his normal weight, cream and butter should be reduced; or if he is losing on his calculated optimal diet, a condition of infrequent occurrence, the diet may be increased until he is up to standard weight.

*The Role of Vitamins In The Treatment Of Gastric And Duodenal Ulcers.*

The problem of lowered resistance, or of the conditions in the stomach or duodenum that predispose to infection, resulting in ulcer, is yet to be solved. However, some of the facts brought out in recent studies on nutrition, particularly with reference to diets deficient in vitamins, if applied to the eating habits of the American people may suggest methods of preventing and curing gastric and duodenal ulcers.

About fifteen years ago, McCollum, Simons and Parsons<sup>10</sup> expressed the opinion that the role of food in the etiology of many diseases "involves increased susceptibility to infection, due to lowered resistance caused by faulty diet." Other workers in nutrition have come to the same conclusion.

McCarrison<sup>11</sup>, a British army surgeon, stationed in a remote region of the Himalaya Mountains, made some observations and experiments which may give the key to an important predisposing cause of ulcers of the stomach and duodenum, as well as to other abdominal diseases due to infections. McCarrison was impressed with the fact that the Himalayans rarely had ulcers of the stomach and duodenum, or other abdominal infections, though they lived under the most unsanitary conditions. He stated that in nine years practice among the Himalayans, during which time he performed more than 3,600 major operations, he "did not see a case of ulcer, or appendicitis, or of mucous colitis." In his investigations as to the cause of this remarkable freedom from abdominal diseases among a primitive people, he became convinced that the use of "natural foods, i. e., milk, eggs, grains, fruits and leafy vegetables," protected them against infection.

*McCarrison Experiments.* McCarrison's classic experiments seem to prove that foods of low vitamin value if used over long periods of time predispose to infec-

tions of the gastro-intestinal tract. He placed thirty-six healthy monkeys in two separate cages; twelve were fed on "natural" foods, i. e., milk, eggs, grains, fruits and leafy vegetables, and all of them remained healthy and free from gastro-intestinal diseases. He fed twenty-four monkeys on a sterilized carbohydrate diet, i. e., autoclaved rice, and most of them developed gastro-intestinal lesions, three out of ten autopsies having shown gastric ulcers present.

McCarrison is of the opinion that vitamins B and C serve to protect the gastro-intestinal tract from infections, and that the deleterious effects of a deficiency of these vitamins is enhanced when the food is improperly balanced, particularly when associated with an excess of carbohydrates. He states that "impairment of the protective resources of the gastro-intestinal mucosa against infecting agents may be due to hemorrhagic infiltration, to atrophy of the lymphoid cells, and to imperfect production of gastro-intestinal juices. This impairment not only results in infections of the mucous membrane itself, but also permits of the passage into the blood stream of micro-organisms from the bowels."

McCarrison showed, by illustrations of sections of various parts of the gastro-intestinal tract, that all these changes occur in animals fed on diets poor in vitamins and with an excess of carbohydrates. He asserts that "gastric and duodenal ulcer, colitis, and failure of colonic function can be produced experimentally by means of feeding animals on faulty food." He does not state that the faulty diet is the only cause of these gastro-intestinal conditions, but believes that pathogenic organisms are contributing factors. As proof that a faulty diet lowers resistance to infections, McCarrison fed endameba histolytica to healthy monkeys and failed to infect any of them, while those on a deficient diet became readily infected when given endameba histolytica organisms.

*The Relation of Faulty Diets to Ulcers and Other Abdominal Infections.* If McCarrison is right in his conclusions that a diet deficient in vitamins B and C predisposes to gastro-intestinal infections, many sugar saturated, vitamin starved Americans, i. e., those who live largely on white flour bread, white potatoes, white rice, lean meats, sugar saturated coffee, and sugar laden desserts, with candy and soft drinks between meals, would seem to be

susceptible to ulcer and other abdominal diseases in which infection plays a part. The fact that more than 25 per cent of the patients in the general hospitals in the United States are admitted because of abdominal infections, i. e., appendicitis, gall bladder disease, ulcers of the stomach and intestines, and colitis, may be accounted for partly by the unbalanced diet of the American people.

Even casual observations of the eating habits of people in cafes, hotels, dining cars and their homes will reveal the fact that the starches and sugars and lean meats which are devoid of vitamins make up a large proportion of the diet of all classes of people, and that fruits and vegetables and milk, which are rich in vitamins, are eaten but sparingly by the masses. It is true that as a result of the increased interest in diet, educated, well informed people are eating better balanced meals than ever before; but all students of nutrition agree that the great fault in the diet of the average American family is the excessive use of vitamin-free carbohydrates.

A study of the quality and amounts of foods consumed by patients before they developed symptoms of ulcer may throw some light on the question as to whether or not a high carbohydrate, poor vitamin diet predisposes to the disease. It likewise would be of interest to study the food habits of ulcer patients in whom there were recurrences following operation or dietetic and medical treatments.

*Sugar Saturated, Vitamin Starved Americans.* For a quarter of a century before McCarrison's classic experiments, and many years before Rosenow's work proving the relationship of infections to ulcer, Deeks contended that a high carbohydrate diet, particularly cane sugar products, was responsible for the increasing incidence of gastric and duodenal ulcers, but on the theory that the irritating effects of carbohydrate fermentation in the gastro-intestinal tract was the etiologic factor. Deeks has recently revised his views and feels that an added factor is the deficient vitamin diet of those who eat excessively of sugars and the foods of high starchy content that are now in common use.

Pari passu with the increase in ulcers of the stomach and duodenum and other abdominal infections has been the increased consumption of sugar, syrups, white

flour, white corn meal, white rice, white potatoes and other devitalized, or devitaminized, carbohydrates. The statistics on sugar consumption are available and are significant. Our consumption of sugar has increased nearly 500 per cent in the last half century, from 23 pounds (10 Kg.) per capita in 1870 to 106 pounds (48 Kg.) in 1926. In other words, every man, woman and child in the United States eats on an average one-third pounds or about a teacupful, of sugar a day. Statistics on the increased consumption of other devitaminized carbohydrates were not available at the time this paper was prepared, but there can be no question of their increased use in the United States.

Concomitant with the unprecedented increase in the use of sugar and other devitaminized carbohydrates has been the passing, particularly in the rural districts, of the home garden, orchard, dairy and poultry yard, which were formerly important adjuncts of every farm and which supplied the protective foods required for perfect nutrition. When these facts are considered, sugar saturated, vitamin starved America presents a problem which should be considered seriously by the medical profession, and the laity should be given the facts regarding the dangers of an excessively high carbohydrate, low vitamin diet. It is only through an enlightened public opinion that the perverted appetite of a nation can be corrected.

*Vitamins A and B.* The recent advances in the study of nutrition have brought out some amazing facts, which should be applied in the treatment of ulcer. Without going into a discussion of the proven facts regarding vitamins, it is an accepted conclusion by nutrition experts that vitamin A protects against respiratory and eye infections, and that it stimulates nutrition generally is well known.

It would, therefore, seem that in dieting an ulcer patient the general nutrition of the patient should be considered and that his diet should be rich in vitamin A. Milk fat (cream, milk and butter) is the best source of vitamin A; though the green vegetables which should make up an important part of an ulcer diet after the first week are rich in this protective food.

No one doubts that the anti-neuritic vitamin protects against beriberi; and McCollum thinks that there are hundreds of thousands of border-line cases of nervous maladies that occur because of a de-



iciency of vitamin B in the diet of the average American. The neurotic element, as a predisposing factor in the etiology of ulcer, is accepted by many gastro-enterologists; and since vitamin B is essential for perfect nutrition of the nervous system, whole wheat bread, vegetables and fruits—important sources of vitamin B—should be part of the diet of ulcer patients.

Dr. Crile observed that removal of the adrenals in animals is frequently followed by the development of duodenal ulcer. It is known that in fatigue there is a deficiency of adrenal secretion and the injection of adrenalin relieves fatigue. McCarrison is of the opinion that vitamin B is necessary for proper adrenal function. There is also evidence suggesting that a deficiency of vitamins affects thyroid and other internal secretions. It therefore seems that since the general use of white flour, white meal, white rice, and white sugar, all devoid of vitamins, a deficiency of vitamin B in the average diet may have something to do with the apparent increase of duodenal ulcer during the last few decades.

*Vitamin C Protects Against Abdominal Infections.* The anti-scorbutic vitamin, C, seems not only to protect against the disease known as scurvy, but against infections of the entire gastro-intestinal tract. It, therefore, would seem advisable for the ulcer patient to have a diet rich in vitamin C, with the view not only of aiding in healing the ulcer but also to keep him, as nearly as possible, in a state of perfect nutrition to prevent recurrences of the infection.

Fruit and raw vegetables are the best sources of vitamin C and since it has been proven that they do not increase gastric acidity, there is no reason why strained tomato juice, or the strained juice of other uncooked fruit and vegetables should not be begun early in the diet of the ulcer patients. Patients always like orange juice, it rarely disagrees, and there is no reason why it may not be given on the first day of treatment of ulcer cases. The first six days we give one feeding at 9:00 P. M., of the same quantity, from one-half to three ounces, of orange juice, with the milk and cream mixture. After the first week, orange juice, three ounces, is given with breakfast; and three ounces strained tomato juice with evening meal. Since the heat necessary for canning tomatoes does not destroy vitamin C, if fresh tomatoes are not available the strained

juice from canned tomatoes may be used. Some patients do not like tomato juice, but when told that it is both food and medicine, they take it and soon cultivate the taste for it. It is sometimes necessary to prove to the patient that the old idea of acid fruits and acid vegetables being incompatible with milk is a fallacy; but a few feedings of orange or tomato juice with meals made up largely of milk and cream, soon convince him that there is no such incompatibility.

*Diet for the Average Ulcer Patient Weighing 154 Pounds (70 Kilograms).* It is not possible to prepare a diet suitable for all ulcer patients; but it is practicable to construct daily menus for the average ulcer patient, which may be modified, if necessary, to meet the varying nutritional needs of the individual under treatment. We use the following simplified diet for the average medical ulcer case. It is so constructed that it may easily be changed, increasing or decreasing the amounts of carbohydrates, proteins and fats to meet the estimated requirements in any given case.

#### SIMPLIFIED DIET FOR MEDICAL ULCER PATIENT

First Day: Every hour from 7 A. M., to 7 P. M., one-half ounce of a mixture of one-third cream to two thirds milk (thirteen feedings). One-half ounce strained orange juice after milk at 7 A. M., 1 P. M., and 7 P. M.

Second Day: Every hour from 7 A. M., to 7 P. M., one ounce of a mixture of one-third cream and two-thirds milk. One ounce strained orange juice after milk at 7 A. M., 1 P. M., and 7 P. M.

Third Day: Every hour from 7 A. M., to 7 P. M., (inclusive), one and one-half ounce of a mixture of one-third cream and two-thirds milk. One and one-half ounces strained orange juice after milk at 7 A. M., 1 P. M., and 7 P. M.

Fourth Day: Every hour from 7 A. M., to 7 P. M., (inclusive), two ounces of a mixture of one-third cream and two-thirds milk. Two ounces of strained orange juice after milk at 7 A. M., 1 P. M., and 7 P. M.

Fifth Day: Every hour from 7 A. M., to 7 P. M., (inclusive), two and one-half ounces of one-third cream and two-thirds milk. Two ounces strained orange juice after 7 A. M., 1 P. M. and 7 P. M., milk.

Sixth Day: Every hour from 7 A. M., to 7 P. M., (inclusive), three ounces of a mixture of one-third cream and two-thirds milk. Two ounces strained orange juice after milk at 7 A. M., 1 P. M., and 7 P. M.

Seventh to Tenth Days. 7 A. M., Breakfast: 3 ounces strained orange juice, 6 tablespoonsful strained oatmeal or one shredded wheat biscuit, with 2 ounces cream—no sugar. 1 slice dry toast of whole wheat bread. One soft boiled egg. 1 pat butter. 3 ounces milk.

10 and 11 A. M.: 1 ounce of cream and 2 ounces of milk.

12 M., Dinner: 3 ounces strained tomato juice. 1

tablespoonful scraped beef, slightly broiled. 1 slice whole wheat bread, toasted. 1 pat butter. 3 ounces milk.

2, 3, 4 and 5 P. M.: 1 ounce of cream and 1 ounce of milk.

6 P. M., Supper: 3 ounces strained orange juice. 6 tablespoonsful strained oatmeal or one shredded wheat biscuit toasted, or dry toast of whole wheat bread. 1 pat butter. 2 ounces cream. 1 soft boiled egg. 3 ounces milk.

Eleventh to Fourteenth Days. 7 A. M., Breakfast: 3 ounces strained orange juice. 6 tablespoonsful strained oatmeal or one shredded wheat biscuit. 3 ounces cream. 1 soft boiled egg. 1 slice whole wheat bread toasted. 1 pat butter. 3 ounces milk.

9 and 11 A. M.: 3 ounces milk and 1 ounce cream.

12 M., Dinner: 3 ounces strained tomato juice. 2 large tablespoonsful scraped beef or minced breast of chicken. 1 slice whole wheat dry toast. 1 pat butter. 2 tablespoonsful ice cream, 3 ounces milk and 1 ounce cream.

3 and 5 P. M.: 3 ounces milk and 1 ounce cream.

6 P. M., Supper: 3 ounces orange juice (strained). 1 soft boiled egg. 1 slice whole wheat bread, toasted. 1 pat butter. 3 ounces milk—2 ounces cream.

9 P. M.: 3 ounces milk and 2 ounces cream.

Fifteenth to Twenty-first Day. 7 A. M., Breakfast: 3 ounces strained orange juice or strained grapefruit juice. 6 tablespoonsful strained oatmeal, cream of wheat or other smooth cereal—no sugar. 3 ounces cream. One soft poached or soft boiled egg. One slice toast, whole wheat bread, and two pats of butter.

10 A. M.: 5 ounces milk (half cream).

12 M., Dinner: 4 ounces strained tomato juice or strained vegetable soup. 4 rounded tablespoonsful scraped beef or minced breast of chicken. 4 rounded tablespoonsful tender green vegetables, as turnip greens, spinach or string beans (mashed through a sieve). 1 slice whole wheat bread toast; two pats butter. 1 rounded tablespoonful ice cream, cup custard, boiled custard or gelatine and cream.

3 P. M.: 5 ounces milk (half cream).

6 P. M., Supper: 4 ounces thick puree of peas or beans. 4 tablespoonsful tender green vegetables as turnip greens, spinach or string beans mashed through a sieve. 1 slice whole wheat bread toasted; two pats butter. 5 ounces milk. 3 ounces strained orange juice.

9 P. M.: 5 ounces milk (half cream).

Fourth, Fifth and Sixth Weeks. 8 A. M., Breakfast: 3 ounces strained orange juice. Six tablespoonsful strained oatmeal, or one shredded wheat biscuit, or other cereal (no bran); three ounces cream—no sugar. One egg, soft boiled, poached or scrambled. One slice dry toast, whole wheat bread; two pats butter.

10 A. M.: 5 ounces of milk (half cream).

1 P. M., Dinner: 4 ounces strained tomato juice, clear broth or tomato broth, or strained vegetable soup. 4 to 6 rounded tablespoonsful scraped beef or minced chicken or lamb. 4 to 6 tablespoonsful turnip greens, spinach or string beans, or carrots, mashed through a sieve. One slice dry toast, whole wheat bread; two pats butter. 4 tablespoonsful ice cream, boiled custard or gelatine.

4 P. M.: 5 ounces milk (half cream).

6 P. M., Supper: 4 ounces thick puree of green or dried peas or butter beans. 4 to 6 tablespoonsful turnip greens, spinach or string beans or carrots, mashed through a sieve. One slice whole wheat

bread toast; two pats butter. 4 ounces milk, 4 ounces strained orange juice.

9 P. M.: 5 ounces milk (half cream).

#### DIET AFTER SIX WEEKS

After six weeks the ulcer diet may be increased or decreased to keep the patient at his normal weight and in a perfect state of nutrition. With that end in view, while undergoing treatment he should be taught the simple facts regarding the vitamin values of food and the importance of continuing to eat a well balanced diet for the rest of his life. This does not mean food restriction, or what not to eat, as much as it does the necessity for taking a sufficient amount of food to keep up strength and endurance, as well as to eat enough of the protective foods to prevent a recurrence of the ulcer.

Especially should he be taught the dictum of McCollum's perfect nutritional day; i. e., that each normal person should drink from a pint to a quart of milk a day, and eat one raw fruit, one raw vegetable and two cooked leafy vegetables daily. In addition to that, he should eat a reasonable amount of meat once a day, one piece of bread, preferably made of whole wheat flour, or country ground corn meal, with liberal quantities of butter with each of three meals a day, and then a dessert of fresh fruits, cooked or uncooked, without sugar, or perhaps ice cream, sherbet or other light sugar dessert at one meal. This diet gives the patient with healed ulcer a wide variety of the most palatable foods known to man. He soon realizes that on such a diet he receives the greatest enjoyment from eating; he is comfortable and efficient, and he experiences the joy of living more than he did when he ate without a thought of whether or not the quality and quantity of foods he consumed met his daily nutritional needs.

Diet After Six Weeks. Breakfast: One fruit—Strained orange or grapefruit or cantaloupe juice. One cereal—small portion of thoroughly cooked oatmeal, or other cereal, no bran, or one shredded wheat biscuit with one-half glass cream, no sugar. Eggs—one egg poached or soft boiled, or soft scrambled. Bread—one slice whole wheat bread toast, two or three pats butter; two tablespoonsful honey. Milk or cocoa—one glass milk or cup of hot cocoa.

Three Hours After Breakfast: 1 glass milk (one-third cream).

Dinner: Soup—strained chicken, celery, vegetable, barley soup, or strained tomato juice. Tender meats (small portion)—broiled, or baked, not fried; small portion of chicken, turkey, mutton, roast beef, bacon, thinly sliced boiled ham, or fish. Tender green and yellow vegetables (one variety of each)—large serving spinach, turnip greens, tender string beans, cook-



ed without much grease, carrots, squash, or young turnips. Butter or mayonnaise or olive oil and lemon juice may be used freely on vegetables after they have been cooked. Bread—one slice whole wheat bread or dry toast, or small piece of country ground corn meal bread, or one small corn muffin; two or three pats of butter. Milk—one glass milk or buttermilk (one-third cream). Desert—soft part of baked apple, thoroughly ripe banana or other fruit with cream, no sugar. Ice cream or gelatine, or sherbet, twice a week.

Three Hours After Dinner: 1 glass milk.

Supper: Soup—Puree (thick strained soup) of peas or beans, or oyster stew, no oysters. Raw vegetable salad—Crisp lettuce (trim out tough stems); peeled tomatoes (cut out rough centers); crisp cole slaw made of leafy part of tender cabbage (cut out the stems of the leaves). Olive oil and lemon juice or apple vinegar, or mayonnaise dressing may be used freely. Two crisp crackers. Cheese—four table-spoonsful home made or dairy made cottage or cream cheese, or the equivalent of two tablespoonsful of Swiss, Philadelphia, or yellow American cheese, never cooked. Bread—one slice wholewheat bread or dry toast, or six crackers. Two or three pats butter. Milk—one glass sweet milk, or buttermilk (one-third cream). Desert—strained orange juice, soft part baked apple, or very ripe banana and cream without sugar, or gelatine, or egg custard.

#### DIETARY MANAGEMENT OF PEPTIC ULCER PATIENTS BEFORE AND AFTER OPERATIONS

The problem of dieting the ulcer patient before and after operation is entirely different from that involved in the effort to heal gastric and duodenal ulcers medically; and the recognition of the pathologic physiology in the surgical patient, while applying the accepted principles of nutrition adapted to the needs of the individual under treatment, will reduce very materially the operative mortality of ulcer. Likewise, rational postoperative dietary management will prevent many recurrences of the original ulcer as well as safeguard against the dreaded jejunal or gastro-jejunal ulcers which follow only too frequently after gastroenterostomies.

The failure to get the ulcer patient in the best possible state of nutrition before operation and haphazard postoperative dieting account for the deaths from acidosis, shock and myocardial weakness of many asthenic individuals whose resistance has been lowered by years of malnutrition from pyloric stenosis with resulting gastrectasis. It also is true that the infections causing postoperative pneumonia, pleurisy, peritonitis and other complications following gastro-enterostomy and gastric resection may be prevented in many cases if the patient is properly prepared for the operation by a few days of dieting suited to his particular needs. Therefore, the surgeon should not con-

sider a gastric operation as merely a mechanical procedure, but should recognize the nutritional problems involved, and when possible he should associate with him in the management of his ulcer patient a physician who has had the proper training and ample experience in dealing with such cases. It is still better for the surgical ulcer patient to be under the care of the physician and let him call in the surgeon to perform the operation when the patient has been properly prepared.

*Nutritional Preparation of the Ulcer Patient Before Operation.* There can be no routine diet and no fixed period of time required to prepare an ulcer patient for operation. Each case presents problems that have to be worked out to meet the nutritional requirements of the individual under treatment. The well-nourished ulcer patient, without gastric retention, and with a normal or high degree of free hydrochloric acid in his stomach contents after a test breakfast, requires very little or no preoperative preparation. For breakfast and dinner the day preceding operation he may have soft diet, with no meats and restriction of fats; and for supper, one or two crackers, or a piece of toast with jelly or honey, and a glass of skimmed milk or buttermilk. No butter, cream or other fats should be given to any patient for twenty-four hours before a gastric operation.

It is advisable for even the well-nourished patient to have at least 3000 c.c. of fluid during the twenty-four hours preceding a gastric operation; and the nurse in charge should be instructed to see that he gets that much water and other fluids. The fluid intake should be charted, recording the time and amounts of water, dextrose orangeade, dextrose lemonade, skimmed milk or buttermilk, or other fluid; and the surgeon should know that the patient has had approximately 3000 c.c. of fluids during the twenty-four hours before operation. No food, not even milk or strained orange juice, should be given the morning of the operation, and drinking water should be stopped at least four hours before the patient is carried to the operating room.

*Preoperative Preparation of Ulcer Patients with Gastric Retention.* Many ulcer patients do not come to operation until they have suffered for many years and repeated exacerbations of a very chronic condition, which disturbs nutrition, not only by absorption of the toxic substances

resulting from infection, but by actual starvation and dehydration because of weeks or months of gastric retention from pylorospasm, or actual pyloric obstruction. Dehydration and starvation predispose to post operative acidosis, alkalosis and infection; therefore the important indications in the preparation of the ulcer patient with gastric retention for operation is the free use of fluids and soluble carbohydrates.

The time required for the preparation for an elective operation on an ulcer patient with gastric retention cannot be fixed because it depends upon his state of nutrition and his vitality as to whether or not he can survive a serious abdominal operation. Not less than three or four days should be required in the fairly well-nourished patient with retention; and from one to three weeks are necessary in preparing the emaciated, anemic and dehydrated patient with gastric retention of over 50 per cent six hours after the barium meal.

*Fluids and Soluble Carbohydrates Before Gastric Operations.* Soluble carbohydrates may be given freely, but no protein foods should be given for twenty-four hours before operation in the ulcer patient with pyloric obstruction because water passes out of the stomach slowly during gastric digestion, and there may be retention of food and fluids in the stomach if milk or any other food containing protein is given. Fats are retained in the stomach even longer than proteins, and an excess of fats is a cause of acidosis. Therefore, no fats should be given to ulcer patients for at least twenty-four hours before operation.

Strained lemon juice, one ounce, to five ounces of a ten per cent dextrose, or glucose solution makes delicious lemonade; or strained orange juice, two ounces to four ounces of a ten per cent glucose or dextrose solution (orangeade) may be given in six ounce feedings every hour during the day, and every two or three hours at night if the patient is awake up to within six hours of the operation. This will give the patient from 250 to 300 grams (1,000 to 1,200 calories) of glucose and about three litres (six pints) of fluid in the twenty-four hours. If the dextrose or glucose solution cannot be retained by mouth, it should be given by hypodermoclysis in a five per cent dextrose or glucose solution, or intravenously in ten per cent solution in quantities of from 500

to 1000 c.c. every four to six hours. Intravenous dextrose or glucose solutions, properly prepared and properly given, often saves the lives of patients before and after gastric operations.

There are few hospitals in the United States that are properly equipped to prepare their own dextrose or glucose solutions, and most of the reactions following intravenous glucose solutions are due to faulty technic in its preparation. Therefore, it is best to use the ampules, prepared by reliable pharmaceutical houses, containing 50 grams of a 50 per cent solution of dextrose, the contents of which added to 200 c.c. of double distilled water will make a 10 per cent solution, or if added to 450 c.c. of distilled water will make a 5 per cent solution. If the patient is very weak not more than 500 c.c. of a 10 per cent solution should be employed, because there is danger of overloading a feeble heart. The intravenous dextrose solution should be given very slowly, requiring at least twenty minutes to introduce 500 c.c. of a ten per cent solution into the vein through an 18 gauge needle.

*The Futility of Giving Glucose or Dextrose Solutions by the Rectum.* Dextrose or glucose solutions when given by the rectal route are of questionable value. Having observed flatulency and abdominal discomfort in a number of our operated ulcer cases that we thought were due to the use of glucose and water by the Murphy drip, we request the surgeons who operate for us to spare the rectum and colon except for plain water enemata. Recent studies seem to prove that very little, if any, dextrose or glucose is absorbed from solutions given by the rectum. From experimental and clinical studies by McNealy and Williams<sup>13</sup>, Pressman<sup>14</sup>, deTakats<sup>15</sup> and Schmidt and Cary<sup>16</sup>, it seems that the use of glucose or dextrose solutions per rectum not only is futile, but may be actually harmful to the ulcer patient either before or after operation. Apparently American surgeons are discontinuing the use of proctoclyses of all kinds after gastric surgery, because as Strauss says they prefer to keep the intestines at absolute rest."

In a very timely article on the dangers of the surgeon's order to "push fluids," deTakats calls attention to "the fear of dehydration that has swept the country." deTakats thinks that 3,000 to 4,000 c.c. in twenty-four hours is as much fluid as any patient should have before or after any



operation; and that where there is myocardial damage, or kidney insufficiency or both, the fluid intake should be reduced very materially. The dehydrated, emaciated ulcer patient often has some cardio-renal damage and a weak heart may fail, and poorly functioning kidneys may allow water retention with the symptoms of what Rountree" calls "water intoxication" if an excessive amount of fluids is given.

Certainly the safest and the most accurate methods of administering dextrose solutions, Ringer's solution and saline solutions before or after operations are subcutaneously and intravenously. The rectum should not be disturbed except to give plain water enemata, not more than 1,000 c.c. by the Murphy drip method once or twice a day before and after operations. If the patient cannot take fluids by mouth and one feels that he must give fluids by the rectum before or after an operation, undoubtedly the safest, surest and most comfortable method is the use of from 200 to 300 c.c. of warm tap water by enemata, given slowly through a soft rubber catheter, every two or three hours.

*Transfusions.* Transfusions in preparing the undernourished, dehydrated, anemic ulcer patient for operation are of inestimable value. A transfusion of from 250 to 500 c.c. of blood provides the recipient with much needed nourishment, as well as other vital ingredients needed to carry him over the crisis of an operation. If the patient is very anemic and emaciated, one or more transfusions before and after operation may be a life-saving procedure. Undoubtedly transfusions are not employed as often as they are needed in the preparation of ulcer patients for operations.

*Postoperative Dietary Management.* In dieting after gastric operations the state of nutrition of the patient, the ulcer pathology, and gastric physiology should be considered. A distinguished surgeon is credited with saying that no patient who cannot survive a week's starvation should submit to a gastric operation. It is certainly true that the amount of food that can be given safely to a patient for the first week after gastric operation amounts to only a fraction of what he will metabolize during that time. He, therefore, must depend largely upon his own tissues (endogenous katabolism) for sustenance. The reserve glycogen in the liver, muscles and other tissues will be utilized first, then the

fats will be burned and finally the proteins will be katabolized.

*Subcutaneous and Intravenous Dextrose Therapy.* One thousand c.c. of a five per cent glucose solution given by hypodermoclysis every eight hours after operation will give the patient 150 grams of glucose (600 calories) in twenty-four hours, sufficient carbohydrates to insure proper metabolism of the patient's endogenous fats, thus preventing acidosis. If the patient is vomiting or if he is very weak for the first two or three days after a gastric operation, it may be best to alternate with, or substitute for, the subcutaneous dextrose solutions 500 to 1,000 c.c. of a ten per cent dextrose solution intravenously.

Glucose or dextrose should not be given subcutaneously in over five per cent solution because of the pain produced by the more concentrated solutions. It may be given in ten per cent solution intravenously provided it is given very slowly.

The urine of the postoperative ulcer patient should be examined for sugar and diacetic acid once or twice a day, and blood sugar determinations should be made at least once a day in serious cases. If the carbohydrate tolerance is proved to be low and if there is diacetic acid in the urine, ten or twenty units of insulin given hypodermatically may save the patient from acidosis.

*Water and Food by Mouth After Operations.* Surgeons differ as to when water may be given by mouth after gastric operations. Since water passes out of the stomach in a few minutes when it contains no food, it would seem that after twenty-four hours no harm could be done by giving a few sips, one or two teaspoonsful, of either hot or cold water every one or two hours during the day, increasing it on the third and fourth days to two ounces, and to three ounces on the fifth day. Certainly the sooner the patient can get his daily quota of water by mouth, without distention of the stomach the better it is for him. The amount of water and other fluids retained should be recorded every day, reducing the subcutaneous and the intravenous use of dextrose solutions and the water per rectum as the patient can take more fluids by mouth.

#### A SIMPLIFIED POSTOPERATIVE ULCER DIET

It is not possible to construct a diet that may be used in every ulcer case that has been operated upon any more than a rou-

tine diet can be used with every ulcer patient treated medically, but we have prepared a diet that will meet the nutritional needs of the average postoperative patient while at the same time taking into consideration the ulcer pathology and gastric physiology involved. It may be modified to suit the indications in the individual case. Copies are given to the resident surgeon, or surgical interne, the nurses and the hospital dietitian with instructions to change the orders only with the approval of the surgeon or the associated physician.

**First Twenty-four Hours:** No food or water by mouth. Two hundred fifty c.c. plain warm water by slow enema every two hours. If the patient is vomiting, or in shock, or if there is diacetic acid in his urine, 1,000 c.c. of a five per cent dextrose solution is given subcutaneously every eight hours. Five hundred c.c. of a ten per cent dextrose solution intravenously may be substituted for the subcutaneous dextrose once or twice a day. Water per rectum should be regulated so that the patient does not get more than 3,000 to 4,000 c.c. of fluid a day.

**Second Day:** No food. Begin with one teaspoonful hot or ice water by mouth every hour. If no nausea, increase water to four teaspoonsful every hour, day and night when awake. Fluids and dextrose solutions subcutaneously, intravenously and per rectum as for first day.

**Third Day:** Two ounces (60 c.c.) cool water every two hours day and night when awake. Two ounces ten per cent glucose lemonade, or glucose orangeade, at 7:00 and 10:00 A. M., 1:00, 4:00, 7:00 and 11:00 P. M., and 4:00 A. M. May substitute two ounces (60 c.c.) weak strained tea for 7:00 and 10:00 A. M., and 1:00 P. M., glucose solution. If fluids are retained by mouth reduce the glucose or dextrose solutions by 500 c.c. and water per rectum by 500 to 1,000 c.c.

**Fourth Day:** Three ounces (90 c.c.) cool water every two hours when awake, day and night, alternating with three ounces (90 c.c.) of weak tea with one teaspoonful sugar (without cream); or three ounces of a ten per cent glucose lemonade, or glucose orangeade, or three ounces of gingerale. Tea may produce wakefulness if given after 4:00 o'clock in the afternoon, particularly when given to one who does not ordinarily drink tea or coffee. The water by proctoclysis and glucose solutions by hypodermoclysis, or intravenously, may be discontinued on the fourth day if the patient can take fluids by mouth; but if nausea and vomiting persists, they should be given as on the first day.

**Fifth Day:** Water and the ten per cent glucose lemonade, or glucose orangeade, or grape juice, or gingerale may be increased to four ounces and given every hour and a half, the water alternating with the tea, glucose solution, grape juice or gingerale every three hours.

**Sixth Day:** Water should be given freely between feedings, not over four ounces (120 c.c.) at a time. One egg albumen and three ounces of ten per cent glucose lemonade, or glucose orangeade, or four ounces gingerale every two hours from 8:00 A. M., to 7:00 P. M., and every three or four hours at night if awake.

**Seventh to Tenth Days:** 7:00 A. M., Breakfast. Three ounces strained orange juice. Four table-

spoonsful of strained oatmeal gruel, with two ounces cream. One soft boiled egg. One slice white bread toast with crust trimmed off. 1 pat butter.

10:00 and 11:00 A. M. Five ounces (150 c.c.) dextrose orangeade, or five ounces gingerale.

12:00 M., Dinner. Three ounces (90 c.c.) puree of peas, beans or potatoes. One slice white bread toast. 1 pat butter. Two rounded tablespoonsful of plain jello or ice cream.

3:00 and 5:00 P. M. Five ounces strained tomato juice, or five ounces dextrose or glucose orangeade or five ounces gingerale.

6:00 P. M., Supper. Three ounces strained orange juice. Four tablespoonsful strained oatmeal—two ounces cream—no sugar. One soft poached egg on white bread toast. 1 pat butter.

9:00 P. M., and 1:00 and 2:00 A. M.—if awake. Five ounces strained tomato juice, or five ounces of dextrose or glucose orangeade, or five ounces gingerale.

**Eleventh to Fourteenth Days:** 7:00 A. M., Breakfast. Three ounces strained orange juice. Six tablespoonsful of strained oatmeal—with two ounces cream. One soft boiled egg. One slice white bread toast with crust trimmed off, and one pat butter.

10:00 and 11:00 A. M. Five ounces (150 c.c.) dextrose orangeade, or five ounces gingerale.

1:00 P. M., Dinner. Five ounces strained tomato broth, or strained vegetable soup, or creamed soup. One slice white bread toast. 1 pat butter. Two rounded tablespoonsful plain jello or ice cream.

3:00 and 5:00 P. M. Five ounces strained tomato juice, or five ounces dextrose or glucose orangeade, or five ounces gingerale.

6:00 P. M., Supper. Three ounces strained orange juice. Six tablespoonsful strained oatmeal or cream of wheat—2 ounces of cream—no sugar. One soft poached egg on white bread toast and 1 pat of butter.

9:00 P. M., and 1:00 or 2:00 A. M., if awake. Five ounces strained tomato juice, or five ounces dextrose orangeade, or five ounces of gingerale.

If the ulcer patient is comfortable at the end of two weeks after the operation the diet as advised in the medical treatment may be given. It is just as important for the surgical ulcer patient to be dieted for at least a year after the operation as if he had been treated medically.

*General Instructions to the Convalescent Ulcer Patient.* The patient with ulcer while undergoing either medical or surgical treatment should be taught good eating habits. He should be shown the necessity of thorough mastication and told that the use of peppers, spices and condiments is an acquired and wholly unnecessary habit, which he should avoid. Hot biscuits, fresh rolls, and corn bread with tough crust, fried foods, pies, pastries, cakes and syrup should be eliminated from his dietary. Likewise, tough meats, green corn, strawberries and other berries, fruits with tough skins, and vegetables with woody fiber, such as old okra and asparagus, should be omitted. Coffee, tea, caffeine beverages, wines, beer, whiskey or other



alcoholic beverages, since they increase the gastric acidity, should not be used by the patient who has recovered from ulcer. Tobacco should also be interdicted.

It is not enough to tell the ulcer patient in general terms of the foods which he should eat or which he must not take; he should be given a diet list with specific instructions regarding the portions of the various dishes for each meal. The patient should also be taught that perfect digestion depends not only on having the proper quantity and quality of food but on many other factors, such as overwork, worry, fear, anger, grief and other emotional disturbances which may predispose to ulcer.

While the dietary management of the patient with ulcer is most important, diet alone is not sufficient in treating the disease. Medicines, as indicated, should be employed. It is likewise necessary to examine every organ in the body for possible complications, because not infrequently other diseases may be found.

It is especially important at the beginning of treatment to search for possible foci of infection in the nasal and accessory sinuses, the teeth, tonsils, gall-bladder, pancreas, appendix, colon recto-anal region the urostatic gland in the male and the genital organs of the female, and the extremities. Of course, if a possible focus of infection is found, it should receive appropriate treatment and be removed if possible.

There is no need for the patient who has been cured of ulcer to regard himself in any other way than as a normal person, but he should report at frequent intervals to his physician for advice regarding diet and other matters pertaining to personal hygiene.

#### SYSTEM OF HYGIENIC LIVING FOR THE HEALED ULCER PATIENT

The great majority of properly treated ulcer patients, whether medical or surgical, may look forward to becoming more efficient and to enjoying life more than they ever did before; provided they follow the same rules of personal hygiene that every man in health should observe. The ulcer patient perhaps will live longer than he would have had he not developed an ulcer, because if taught properly how to live, as the physician or surgeon has the opportunity of doing, he will take such good care of himself that he will be less

susceptible to many of the infirmities of middle life, and old age will thus be deferred.

A copy of the following outline of a system of hygienic living with copies of simplified diet lists prepared to suit his particular needs is given to each of our ulcer patients before they are dismissed.

1. **The Proper Diet.**—Three medium meals a day at the same hours, and a glass of milk between meals for at least three months after treatment; then one raw fruit, one raw vegetable, two cooked tender green vegetables, a pint to a quart of milk every day for the rest of the ulcer patient's life. Meat and light desserts are allowed not more than once a day; and enough bread, potatoes, rice, butter and other simple foods to maintain the normal weight. Thorough mastication of food is very important.

2. **Work—Avoid Overwork.**—Six to eight hours of honest work a day for five days a week and three or four hours on Saturday.

3. **Sleep.**—Eight or nine hours in bed at night; and lie down, sleep if possible, for half an hour after the noon meal.

4. **Exercise.**—Fifteen minutes room exercises with windows wide open, before the morning bath. Follow the bath with massage (brisk rubbing with open hand) of the entire body until the skin is reddened. A walk of one or two miles in the open air and sunlight each day, or what is better, play golf two or three afternoons a week.

5. **Recreation.**—Eight hours for play includes morning exercises, bath, golf, or other outdoor exercises; time for eating at least one-half hour for each meal, perhaps an hour for dinner and no work or serious reading after six o'clock in the afternoon. Frequent week-end trips and an annual vacation of from two weeks to a month every year.

6. **Serenity.**—Worry, anger, grief, abnormal fears, or other emotional disturbances will break down resistance to infections. Therefore, the cured ulcer patient should cultivate serenity in all the relations of life.

7. **Eliminate the Toxins.**—Coffee, tea and the so-called cola drinks, which contain caffeine, a habit forming drug, should not be used by the ulcer patient, except occasionally as a stimulant after losing sleep; or as a drug for headache or shock. Tobacco and alcohol are predisposing causes of ulcer and are quite injurious to the ulcer patient. Therefore, he should never use them in any quantity, even after his ulcer has been pronounced cured.

8. **The Annual or Semi-annual Physical Examination.**—The ulcer patient should report to his physician once a month for six months, and then for the rest of his life have an annual or semi-annual physical examination, with particular reference to a possible return of the ulcer; or the possible development of a cancer of the stomach, which, if diagnosed early, can be cured by operation.

Each section of the above outline of hygienic living is discussed with the patient and he is shown how he can conform his daily habits to a regular systematic regimen. He is also impressed with the fact that his future health, efficiency and happiness depend largely upon his living

the simple hygienic life, and that he must do his part in preventing a recurrence of his ulcer.

2234 Highland Avenue.

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#### RENAL FUNCTION IN ARTERIAL HYPERTENSION

Laurence B. Ellis and Soma Weiss, Boston (*Journal A. M. A.*, March 25, 1933), used the usual urinalysis, urea and creatinine clearance tests and concentration-dilution tests in a study of the renal function of twenty-four cases of arterial hypertension without clinical signs of cardiac or renal failure, and in eight cases of glomerulonephritis. In ten of the cases of hypertension the urea clearance test gave normal results; in nine there was a slight reduction, and in five it was markedly lowered. Creatinine clearance tests, in eighteen of the same cases, were normal in thirteen instances, slightly reduced in two, and markedly reduced in three. In general, the outcome of the urea and creatinine tests tended to give parallel results. In the twenty-two cases in which the concentration test was performed in the patients with hypertension, the maximum specific gravity of the urine was above 1.025 in six instances; ten times it fell between 1.020 and 1.025; and in the remaining six cases

it fell below 1.020. In only two instances did the concentration test show a definite lowering without a marked reduction in the urea or creatinine clearance tests. For practical purposes, in most cases a carefully conducted concentration test is as sensitive an index of renal impairment as the urea and creatinine clearance tests. Marked albuminuria or hematuria was uncommon in hypertension unless great limitation of function was detectable by other tests. The authors analyzed the results of their study in accordance with the filtration-reabsorption theory of renal physiology and correlated them as far as possible with the histologic changes in the kidney, known to occur in hypertension. There was a trend for the degree of impairment of renal reserve to parallel the height of the arterial blood pressure, particularly the diastolic pressure. There was no correlation to be made between the degree of renal damage and the age of the patients, the symptoms or the known duration of the disease.

#### INVESTIGATIONS AND CONCLUSIONS OF COMMITTEE ON COSTS OF MEDICAL CARE

Lewellys F. Barker, Baltimore (*Journal A. M. A.*, March 25, 1933), presents the recommendations of both the majority and the minority of the Committee on the Costs of Medical Care. The majority reports: (1) that medical service, both preventive and therapeutic, should be furnished largely by organized groups of physicians, dentists, nurses, pharmacists and others, organized preferably around a hospital, the service to include home, office and hospital care, with the maintenance of high standards and the development of preservation of a personal relation between physician and patient; (2) that all basic public health services be made available to the entire population according to the needs; (3) that the costs of medical care be placed on a group payment basis, through the use of insurance, of taxation or of both, though service on an individual fee basis for those who prefer it need not be precluded; (4) that the study, evaluation and coordination of medical service be considered important functions for every state and local community and that agencies for the exercise of these functions be formed; and (5) that certain much needed improvements in undergraduate and postgraduate medical instruction be made, that the social aspects of medical practice be given greater attention, and that the practice of the specialties be better controlled. The minority recommends: (1) that government competition in the practice of medicine be discontinued and that government activities be definitely restricted to certain special fields; (2) that government care of the indigent be expanded so as ultimately to relieve the medical profession of the burden; (3) that the recommendation of the majority with regard to the functions of each state and local community in the study, evaluation and coordination of medical service be approved; (4) that united attempts be made to restore the general practitioner to the central place in medical practice; (5) that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed; (6) that methods that can rightly be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice be given careful trial; and (7) that state or county medical societies develop plans for medical care.



# THE JOURNAL

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Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan, Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### YOUR FELLOW-MAN

Certainly we physicians may do well in attempting to emulate the actions of the great men of the past. The writer has recently read a most entertaining volume "Jefferson and Hamilton," by Claude G. Bowers, a great man himself, writer, orator, diplomat and statesman, now holding the post of Ambassador to Spain.

In culling through the actions and lives of Hamilton and Jefferson, Bowers notes that in their political relations they were like "two cocks, constantly at each others throats," for they represented widely divergent political views at a time when our nation was in its infancy and in the

process of construction. However, Jefferson was a kindly man. A visitor to Monticello, the beautiful home of Jefferson, noted two busts, one of Hamilton, the other of Jefferson, facing each other across the hall. His comment was "opposite in death as in life."

We would highly recommend this attitude upon the part of our profession. It is said that Jefferson always left an opening for reconciliation with old and valued friends with whom necessity had forced him into temporary divergence of opinion. Jefferson made as few enmities as possible, and later, at some propitious time attempted to, and was usually successful in closing what might have been a life-time breach of cordiality.

What a wonderful thing it would be if our profession would cultivate that attitude. Of course, among the fifteen hundred members we have, some men are hardly worth while paying attention to, but, in the main there is some good in the worst of us, and it is human to have enmities arise. What a wonderful thing it would be to see the small number of physicians in Oklahoma towns working in harmony; yet it is not uncommon to see two men, often good men, pass each other by without the courtesy of even speaking. Often this state of affairs has arisen over the veriest triviality, the "corpse" over which it has arisen sometimes not being worth the snap of one's finger. What a wonderful thing it would be, say to see, five men in a small town working in harmony, remembering that there is both good and bad in the most of us. Their work could be divided by mutual agreement, all doing "general practice," but each selecting some one of the specialties and devoting his spare time to that. Soon you would hear less of this "send the case to Mayo's," they, jointly would be able to handle it, and properly at home. Such a situation would build up a local clinic almost before the builders were aware of their work. It seems utterly silly to see an Oklahoma physician sending a case hundreds of miles away, when right across the street is a man competent to handle the case properly, at a saving of a long, tedious and costly trip, and the money could be kept at home. You may be sure that the physician sending such cases away never gets a penny in return, on the contrary the prestige of his local profession is lowered in the eyes of the community, and all the sender gets is sometimes a

nicely typewritten note of thanks for his trouble.

Build up your home fires and keep them burning. Let cooperation be your watchword, practice this in your daily dealings and soon the bread you cast upon the waters will be returned many fold to you. Get acquainted with your fellowman, stand by him, insist that he stand by you, and soon you will be rewarded by practical results.

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#### DR. CHARLES ROBINSON HUME—A BIOGRAPHY

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Dr. Charles Robinson Hume was born in Monroe County, State of New York, October, 1847. When a lad his parents removed to Southern Michigan. He attended the common schools of the neighborhood, and Oak Grove Academy at Medina, Michigan.

In 1871, he matriculated as a medical student in the University of Michigan, from which school he graduated in 1874. He began the practice of medicine in Perrysburg, Ohio, and in 1876, was married to Miss Annette Ross of that city.

In the winter of 1880-81, with his family, he removed to Caldwell, Sumner County, Kansas, on the border of the Cherokee Strip, then in Indian Territory, now Oklahoma.

In 1890, he was appointed resident physician in the U. S. Indian Service on the Kiowa and Comanche Reservation, holding the position for eleven years until this reservation was opened to white settlement.

In the organization of Caddo county he was appointed as first County Health Officer, holding that position until statehood seven years afterwards. He was the first president of the Caddo County Medical Society, and Secretary-Treasurer of the organization for twenty-two years following. He has been a member of the Oklahoma Territory and State Society since soon after its organization. In 1917, he was elected president of the Oklahoma State Medical Association, and represented the state society at the American Medical Society as delegate in 1918 at Chicago, where a thousand medical officers were in uniform, and the 1919 session at Atlantic City, just after the close of hostilities.

During the World war, Dr. Hume was a member of the Medical Advisory Board,

District Fourteen, Oklahoma, and also a member of the Volunteer Service Corps authorized by the Council of National Defense.

Mrs. Annette Ross Hume passed away January 19, 1933, after more than fifty-six years of married life. She was active in the State Federation of Women's Clubs, and in religious work. She was a member of the Daughters of the American Revolution, Colonial Dames, and up until the time of her death, took active part in the religious and social functions in the State.

They had two sons, Dr. Raymond Robinson Hume of Minco, Oklahoma, and Judge Carlton Ross Hume of Anadarko, Oklahoma.

Dr. R. R. Hume spent a year in the Medical Service overseas, during the war, at which time he was a Captain.

Judge Hume was the first person to receive the M.A. degree from the University of Oklahoma, and his son Ross G. Hume, is in active practice in law in Oklahoma City.

Dr. Charles R. Hume has a great-grandson, Charles Robert Hume, which makes four generations of Humes in Oklahoma.

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#### *Editorial Notes—Personal and General*

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DR. L. W. COTTON, Enid, has been appointed Health Superintendent of Garfield County.

DR. C. R. SILVERTHORNE, Woodward, who has been ill for several weeks, is reported improved.

DR. C. E. WILLIAMS, Woodward, has been reappointed to the County Excise Board of that city.

DR. AND MRS. A. H. McMAHON, Duncan, have returned from a visit to the Chicago World's fair.

DR. AND MRS. J. S. ROLLINS and children, have returned from Chicago, St. Louis, and a tour of the Ozarks.

DR. CLAUDE A. THOMPSON, Muskogee, who has been ill for the past several weeks, is reported improving.

DR. ROSS JACKSON has located in Mangum. Living in Texas for several years, he has returned to his old home in Mangum.

DR. JOHN D. CAMPBELL, formerly of Houston, Texas, has located in Duncan, and will be associated with Dr. B. H. Burnett.

DR. F. W. BOADWAY, Ardmore, recently made



his seventeenth annual visit to the Kiamichi Mountains on a fishing expedition.

DR. J. W. CRAIG, Miami, has returned from an extensive trip over the Northern States, including attendance at the American Medical Association.

ANADARKO'S City Superintendent of Health is not satisfied with the sanitary conditions of the city and has ordered a general cleanup of alleys, etc.

DR. G. S. BARGER, Purcell, accompanied by his family, returned from a trip to St. Louis, Missouri, where they attended the wedding of his son Blanchard.

DR. AND MRS. WALTER HARDY, Ardmore, attended the A. M. A Convention at Milwaukee, and stayed over for a few days at the Century of Progress Exposition, Chicago.

DR. R. M. SHEPARD, Tulsa, attended the National Tuberculosis Association in Toronto, Canada, June 26-30. Dr. Shepard invited the association to hold its 1935 meeting in Tulsa.

DR. L. J. MOORMAN, Oklahoma City, President of the local Tuberculosis Society, and Vice-President of the National Society, attended the society's convention held in Toronto, Canada, in June.

CARTER COUNTY, after years of litigation has had its rights restored to levy a tax for the support of the health unit, upheld by the Supreme Court. The unit is in charge of Dr. John L. Dorough.

DR. PAUL L. SCHROEDER, University of Illinois, Chicago, delivered a post-graduate lecture recently at El Reno on "Mental Hygiene of Infancy and Childhood." Dr. T. M. Aderhold, El Reno, acted as clinic chairman.

DR. WM. J. WHITAKER, Pryor, announces the near completion of his hospital. He will have as an assistant Dr. R. H. Walker, a young surgeon now in San Francisco, who formerly was connected with the McBride Reconstruction Hospital in Oklahoma City.

DR. H. K. SPEED, Jr., Sayre, a new arrival in the field of Oklahoma Medicine, is a son of Dr. H. K. Speed. He graduated from the University of Oklahoma, passed the State Board and will be associated with his father for a short time after which he will take up internship.

TULSA BOARD OF EDUCATION will discontinue its School Health Clinic according to press dispatches. Dr. W. A. Walker, Director of the Board, states that preparations had been made for seventy tonsillectomies and more than four hundred forty dental cases during July.

GARVIN COUNTY MEDICAL SOCIETY met July 19th, at Pauls Valley for its monthly meeting. Dr. L. P. Smith, Elmore City, read a paper on "Some Obscure Aliment of Infancy and Childhood"; Dr. Geo. N. Bilby, State Health Commissioner, Oklahoma City, delivered an address.

ST. JOHN'S HOSPITAL, Tulsa, has offered to take

over the care of county patients, promising a reduction of approximately \$30,000. The Board of Governors and staff of the hospital stated that in their opinion the county work should be divided between the two larger hospitals, St. John's and Morningside.

OKLAHOMA COUNTY COMMISSIONERS AND CITY MANAGER made a sensible and long step forward when they merged the county and city medical services into a coordinated system. The city will continue its dispensary, dispensary physicians being empowered to send needy cases to the County Hospital. A night physician will be maintained throughout the year. Dr. Basil Hayes was appointed County Physician and Dr. George Borecky was appointed field physician.

CARTER COUNTY MEDICAL SOCIETY met in regular session at the First Methodist Church, Monday night, July 10th. A banquet was served by the Ladies of the Missionary Society. Following the banquet was an interesting program on public health subjects:

Address of Welcome—Dr. A. Y. Easterwood, Ardmore, City Health Officer.

"Milk"—Dr. M. M. Miller, Washington, D. C., United States Public Health Service.

"Mental Hygiene"—Dr. J. L. Day, Norman, Physician Central State Hospital.

"Camp Hygiene"—Lt. Baine, Turner Falls, Director C. C. C.

"Milk versus Beer"—Dr. Weith, Pastor of the First Presbyterian Church, Ardmore.

The meeting was open to the public for attendance. There were thirty-two physicians, osteopaths and dentists and about fifty laymen present.

DR. E. S. LAIN, Oklahoma City, has received notice that he has been awarded a Class I award for Medical Research work on "Electro-galvanic Lesions of the Oral Cavity Produced by Artificial Dentures." Notice of this award may be found under the report of the Committee of Awards, Journal of the A. M. A., July, 8, 1933.

#### OTTAWA COUNTY ITEMS

Dr. J. M. Lanning, formerly of Picher, but later of Shawnee, has located in Miami. He is associated with Dr. J. M. Kitchen, formerly of Picher. They have offices in The Miner's Exchange building.

Dr. F. C. Evans of Tulsa, recently located at Afton, for the practice of his profession.

Dr. A. M. Cooter, the dean of Ottawa County's Medicos lost his wife Tuesday, July 26th, after a day's illness of cardiac asthma.

Dr. J. M. Dawson of Afton, a pioneer Oklahoma physician is critically ill at the home of his daughter at Afton. He is suffering from a general break down.

Dr. J. W. Craig of Miami, spent most of the month of June vacationing at Detroit, Toronto, Buffalo, and Chicago, where he attended the Century of Progress, for a week. He reports that the medical displays are very complete and interesting.

Dr. A. M. Cooter of Miami, left Thursday for a month's stay in Denver, Colorado.

Dr. Geo. A. DeTar and wife of Miami, spent a ten days' vacation in Colorado in forepart of July.

Dr. C. V. Powell, Government Physician of the

Seneca Indian School at Wyandotte, is taking his vacation, and his position is being filled by Dr. Goodwin, temporarily.

Dr. W. B. Smith of Miami, was appointed County Physician for Ottawa County by the County Commissioners at their July meeting, at a salary of \$150.00, per month.

Dr. J. B. Hampton of Commerce, is taking a month's vacation in Texas.

#### DR. LAMBERT KUNTZ

Dr. Lambert Kuntz, 75 year old physician of Perry, died June 25th, of cerebral hemorrhage.

He was born in Berkenseld, Germany, in 1858, moving with his family to Sweet Springs, Missouri, at the age of ten.

He received his preliminary education at Sweet Springs, Missouri, and his medical education at Vanderbilt University.

Dr. Kuntz has been in active practice in Perry for the past twenty-five years.

He is survived by one daughter and two sons.

#### REPORT OF THE DELEGATES TO THE A. M. A. MEETING IN MILWAUKEE

At ten o'clock Monday morning, June 12th, the House of Delegates was called to order for the 84th annual session at the headquarters hotel in Milwaukee, with all three Oklahoma delegates present.

Since the last meeting, Dr. Albert E. Bulson, Fort Wayne, Indiana, Vice Speaker of the House of Delegates, had died, and Dr. Warnshuis appointed the Secretary, Dr. Olin West, to act temporarily as Vice Speaker, who took the chair while the Speaker gave his address. The Speaker pointed out that the medical profession was confronted by conditions such as they have never encountered before, which may necessitate revision of attitude and intensified activity with increased alertness as how best to enhance the vital interests of the public and the profession. Reference committees were advised to secure details concerning association affairs before they made their recommendations and all delegates were urged to investigate the sources of information before introducing any resolutions or motions dealing with association policies. It seemed as if the number of deaths of members of the House of Delegates during the past year exceeded that of any year during the history of your delegates and after paying our respects with a moment of silent prayer, the chairman announced the Reference Committees which were to function on all matters introduced during the session. Oklahoma had the honor of being placed on one of these important committees. The speaker then introduced our friend and neighbor, Dr. Edward H. Cary, President of the Association, who gave one of the most thorough talks on organized medicine and the things that the association has been doing that we have ever heard.

Dr. Cary spent eleven months of the year that he was president away from his home in Dallas, on association business and traveled 100,000 miles and was the association's official representative in 80 different engagements. We are safe in saying that Dr.

Cary, gave more of his time to the office than any other president of the association. One of the principal points brought out by Dr. Cary was the contention of the profession that we should have the right in prescribing alcoholic liquors, which has been recognized recently. Dr. Cary went into the question of hospitalization of Veterans very thoroughly and seemed to think that the government should not build any more hospitals to take care of the veterans whose disabilities were not service connected and that seems to be the policy of the administration at Washington, at this time. The government has at present 41,000 beds in Veterans' Hospitals which should be sufficient, but if not, it would be much cheaper to hospitalize their excess patients in private institutions as the expense per patient of maintaining a Government Hospital is greater than a privately operated one. Dr. Cary mentioned the fact that the physician should not be interested in his success alone but should promote and advance the prevention of disease, teach the public how they can ward off illness and instruct them as to the foods most applicable for the different seasons of the year. He spoke of the value of the American Medical Association Journal. It was necessary to draw on the reserve to the extent of \$76,000 to carry on the last year as it has in the past. The magazine Hygeia, which now goes into practically all physicians offices and many private homes, has reached the stage where it is self-supporting and will produce a revenue eventually. After Dr. Cary paid his respects to the prominent deceased members of the association, the President-elect Dr. Dean Lewis of Baltimore, was introduced.

Dr. Lewis made a short snappy talk which showed that the affairs of the association are to be in good hands and he will carry on where Dr. Cary left off. He said that the aim of the Medical Schools today is the desire to graduate the highest type of student who should be admitted to practice without examinations before State Boards.

Dr. Rudolph Matas, vice-president, was introduced. Dr. Matas said that the office of vice-president had been regarded as a sinecure and thought it was only conferred upon him as honorary but that many duties were passed on to him, and that he had spent a busy year. He said that he had spent most of the year in praying and getting all the help that he could from the churches for the preservation of the life of the President so that he would not be called upon to serve in that capacity in case anything happened to the president. Dr. Matas is one of the old school and probably no other physician has more loyal friends than Dr. Matas. We expected to have the pleasure of voting for him as president-elect but on account of the large amount of work shouldered on the president and his advancing years, his name was not placed as a nominee.

The reports of the officers was routine and have been published in the Journal in full, so anyone who is interested, has access to it and we will not bore you with any report in which you are not particularly interested.

After the reports of the officers, numerous resolutions were introduced. One, in which we were all interested, was the one introduced by Dr. Kopetzky of New York: That the Council of Medical Education and Health be authorized to deal with the listing of specialists in the future editions of the Medical Directory. This was referred to the Committee on Medical Education, who recommended its adoption, which was done at the Tuesday meeting. Another important resolution was relative to the election of delegates from State Societies, the gist of which was



that the term of delegates should run from January 1st, to December 31st, so that Dr. West would know in advance the name of all delegates elected for each session, but as it is now, some state societies have their elections only a short time before the annual American Medical Association meeting and the time is so short that the secretary does not have them in time to send to the speaker so he can have them available for appointing the reference committees. The newspapers were all set to get a lot of dope on birth control as Dr. Plass of Iowa, introduced a resolution endorsing same, but it was tabled and no doubt we will hear from it again next year. Dr. Mundt of Illinois, introduced the following resolution which is so practical that we will quote the entire resolution, "Resolved, that it is the opinion of the House of Delegates that the physicians on staffs of hospitals approved for interne training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates request the Council of Medical Education and Hospitals to take this under advisement." This resolution was referred to the Council and will be reported and acted upon at the next session in Cleveland, Ohio. Dr. Bedell of New York, introduced a resolution, the gist of which, is the limiting of the number of medical graduates, as there is an over production of physicians as well as commodities in the United States. This resolution was referred to the Council of Medical Education and Hospitals, who are investigating the matter.

The House of Delegates met in Executive Session Tuesday afternoon, after which we adjourned until 1:00 P. M., Thursday, at which time the final reports were made by the committees and we proceeded with the annual election which resulted in the election of Dr. Walter L. Bierring, Des Moines, Iowa, as President-elect; Dr. John H. Musser, New Orleans, Louisiana, Vice-President; Dr. Olin West was re-elected Secretary, unanimously; Dr. Herman Kretschmer was elected to the office of Treasurer, which had been occupied for several years by Dr. Austin Hayden of Chicago; for the fourteenth time, Dr. F. C. Warnshuis was elected Speaker of the House of Delegates; Dr. Nathan B. Van Etten was elected Vice-Speaker; Dr. Austin A. Hayden of Chicago, was elected to serve as Trustee for five years, to take the place of J. H. Walsh of Chicago; Dr. C. B. Wright, Minneapolis, was elected Trustee for five years in place of Dr. Mitchell, Nebraska, who died a few days before the annual meeting. After a spirited contest, Cleveland, Ohio, was decided upon for the 1934 meeting and seemed to be the most practical place for us to meet as it is centrally located and has ample facilities as regarding hotels and meeting places.

Oklahoma was fairly well represented, for thirty-three of our members were present, which was more than any other state located as far from Milwaukee as we are. Thursday night, as is the usual custom, was given over to the President's Reception and Ball which was not as formal as usual as linen suits were mingled with evening clothes.

Your representatives have no regrets that we voted for Milwaukee as we were royally entertained. I believe that the minor details of the meeting were arranged more carefully than at any place we have ever met but we anticipate as good a meeting in Cleveland in 1934.

DR. HORACE REED,  
DR. McCLAIN ROGERS,  
DR. W. ALBERT COOK.

## R. B. DAVIS COMPANY COCOMALT

An alarming result of the economic depression through which we are passing is the tremendous increase in mal-nutrition among school children. A recent survey of 130,000 school children in 16 states showed that 21 per cent were underweight by 10 per cent or more.

One way in which school and medical authorities are meeting this grave problem—combating this ever-increasing menace—is by serving Cocomalt in milk to the youngsters at lunch time. Every glass is equal in food energy nourishment to almost two glasses of milk alone; and as a result the children very quickly show signs of mental and physical improvement. Wherever possible parents have been asked to cooperate by serving Cocomalt in milk at home. Children love this delicious chocolate flavor food-drink and drink far more of it than they would of milk alone. Very gratifying gains in weight and energy have been reported.

Cocomalt contains a rich supply of Sunshine vitamin D and is accepted by the American Medical Association Committee on Foods.

## PABLUM—MEAD'S PRE-COOKED CEREAL

Mead Johnson & Co., are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water, or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream, salt and sugar may be added as desired.

Mothers will cooperate with physicians better in the feeding of their babies because Pablum is so easy to prepare. Please send for samples to Mead Johnson & Co., Evansville, Ind.

## TUBERCULOUS FISTULA IN ANO

Because of a traditional belief that anal fistulas should not be operated on, they are often neglected in tuberculous patients. Clement L. Martin, Chicago (Journal A. M. A., July 15, 1933), proved 56 per cent of anal fistulas in fifty-five patients having pulmonary tuberculosis to be tuberculous; 72 per cent of twenty cases in 1932 were proved tuberculous, by more detailed investigation. That something more than 72 per cent are tuberculous is probable. Of all pulmonary tuberculosis cases at the Municipal Tuberculosis Sanitarium, 7 per cent presented anal fistulas. The diagnosis of tuberculosis in fistula of the anus and rectum in patients with pulmonary tuberculosis depends entirely on the histopathologic examination because the gross, the clinical and the bacteriologic results are indefinite or of no value. In 87 per cent of the patients with pulmonary tuberculosis on whom anal fistulectomy was performed, healing was complete; the remaining 13 per cent were far advanced cases; despite this fact, healing was progressing in 10.4 per cent of these up to the time of death. This does not confirm the claim that these wounds do not heal satisfactorily. In the tuberculous patient, a perianal abscess should be incised as soon as it is diagnosed. Drainage of the infected area must be maintained. If a sinus or fistula persists, it should be operated on as soon as the general condition permits.

# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

The Interrelationship Between Ovarian Follicle Cysts, Hyperplasia of the Endometrium, and Fibromyomata. J. Thornwell Witherspoon, M.D., New Orleans, Louisiana. Surgery, Gynecology and Obstetrics, June, 1933, Volume LVI, Number 6. Page 1026.

This article is an attempt to prove an association between ovarian follicle cysts and hyperplasia of the endometrium in the causation of histogenesis of fibromyomata uteri. The author reviews the various theories of etiology from a pathologic standpoint. He discusses the influence of heredity and race and the significance of sterility often associated with fibroids. He then presents the data which is quite conclusive to show the relation of hyperplasia of the endometrium to follicle cysts as a causative feature.

He then presents 26 cases who had previously been operated upon with a definite diagnosis of hyperplasia of the endometrium who subsequently required hysterectomy for fibroids. Follicle cysts were present in all and there was hyperplasia of the endometrium.

He then presents 83 cases on whom hysterectomy was done for fibroids showing a large predominance of follicle cysts and hyperplastic endometrium.

He then presents the third group of 41 cases of fibroids and hyperplasia of the endometrium, but the evidence is indirect since the ovaries were not removed for microscopic study, but were merely described at operation.

His summary of the article follows:

1. The various theories pertaining to the histogenesis and etiology of fibromyomata of the uterus are discussed.

2. Evidence is offered to show that the unopposed action of estrin, in the absence of the corpus luteum influence, is the cause of hyperplasia of the endometrium.

3. An hypothesis is advanced to suggest that the unopposed action of estrin on the myometrium, if prolonged sufficiently, would result in fibromyomatous growths.

4. Twenty-six cases of hyperplasia of the endometrium, in which operation was done and diagnosis as such made from microscopic study, and in which a second operation was performed for fibromyomata after an approximate interval of four years and four months, are analyzed.

5. One hundred and twenty-four cases of fibromyomata, diagnosed microscopically, are offered with their associated ovarian and endometrial findings, as presenting added evidence in support of a cause and effect relationship between ovarian follicle cystic formation, hyperplasia of the endometrium, and fibromyomata of the uterus.

6. An hypothetical conclusion is advanced on the uterus results: (1) in immediate endometrial changes, characterized by hyperplasia, and (2) in more latent myometrial pathology in the nature of fibromyomatous growths.

Comment: That the growth of uterine fibroids depends upon the ovarian function has long been established. As a matter of fact, one of the early operative procedures for the treatment of fibroids was the removal of both ovaries. From clinical experience and the careful reading of current literature, one is particularly impressed with the fact that fibroids are very rarely present without either ovarian cysts or a clinical history which would signify their presence at some time during the menstrual life of the patient.

These theoretical discussions would at first glance have very little place in such correspondence as is attempted here, but upon the other hand the very common occurrence of the uterine fibroid, and the therefore constant demand for decisions to be made in its treatment, compel us to understand as much as possible about its etiology and growth so that we may not only properly treat it from the standpoint of the tumor, but from the standpoint of the patient as well.

Indeed, it may be possible in a not distant day to establish prophylaxis against the occurrence of fibroid tumor.

—Wendell Long.

Rupture of the Graafian Follicle, the Corpus Luteum and Small Follicle or Lutein Cysts Simulating Appendicitis. Joe Vincent Meigs, M.D., and W. Fenn Hoyt, M.D., Boston, Mass. American Journal of Obstetrics and Gynecology. Volume XXV, Number 4, April, 1933.

These authors have reported 25 patients with rupture or bleeding from the ovary who have been operated upon at the Massachusetts General Hospital. In many of these cases they feel that operation could have been avoided and that in making a diagnosis of appendicitis in young women a rupture of the ovary should be considered. "Rest in bed and careful observation might prevent unnecessary operation for mild acute appendicitis."

"Sudden onset of pain, low temperature, slightly elevated pulse, and low white count out of proportion to the pain are findings suggestive of this lesion."

"In reporting these cases and from the conclusions drawn, the authors feel a responsibility, for careless observation and unnecessary delay might endanger the life of a woman with acute appendicitis.

Comment: Rupture or bleeding from ovarian cysts is not at all an uncommon cause for pain which simulates very closely appendicitis. I should add to the facts which the authors bring forth a very careful menstrual history as very important, particularly in relation to the time of the pain in the menstrual cycle.

It must not be forgotten, however, that in case of



any grave doubt, removal of the appendix is always the safest procedure from the patient's standpoint.

—Wendell Long.

#### Tubular Adenoma (Arrhenoblastoma) of the Ovary.

By Frank Spielman, M.D., New York. *American Journal of Obstetrics and Gynecology*, April, 1933. Vol. XXV, No. 4, Page 517.

This is a case report of an arrhenoblastoma of the ovary, interesting principally because of its rarity and its striking clinical features. There have been only 24 previous cases reported. The striking clinical features are masculinization of the female in the secondary sex characteristics as evidenced by hypertrichosis, deepening of the voice, coarsening of the features, increase in size of the clitoris, amenorrhea, loss of breast tissue and other changes. In this case the patient had been studied at Mt. Sinai Hospital where no palpable tumors were felt in the pelvis, but later died at another New York hospital from another illness and large tumor of ovary was discovered at autopsy.

The most significant work on these tumors has been done by Meyer, who divided them into three groups. First, the tumors have a regular and typical tubular microscopic arrangement. Second, a group showing an irregular or atypical arrangement of the tubules. Third, intermediate group showing both the typical and atypical features.

The etiology is discussed and attention is called to the fact that masculinization of the female is not exclusively associated with this tumor. "Ovarian cystadenomas, teratomas, carcinoma, as well as adrenal and pineal tumors may also produce the changes."

This author believes that normal studies offer the greatest hope for future enlightenment. In types of abnormality described here, with or without tumor, these studies certainly should be made.

—Wendell Long.

#### Organotherapy of Mastodynia. Alexander C. Gabriellanza, M.D., Chicago, Ill. *American Journal of Obstetrics and Gynecology*, April, 1933, Vol. XXV, No. 4.

This author has presented a small number of cases of mastodynia (painful breasts) treated by ovarian residue and by the administration of female sex hormone. Of eight cases only one patient received no relief from the pain.

The cases are reported and the theories of etiology are discussed. The conclusion is drawn that the cause of mastodynia lies probably in over activity of the corpus luteum and that the primary cause of it is in the hyper-function of the anterior pituitary gland.

**Comment:** We have seen a number of cases of mastodynia who have been relieved by the administration of folliculin, which theoretically is the substance which should cause relief. However, it must be pointed out that painful breasts are very seldom seen as the single abnormality. They are ordinarily associated with other symptoms and with other evidences of glandular dyscrasia. Therefore, careful study of each case in relation to menstrual history, headache, dysmenorrhea, sterility, secondary sex characteristics, etc., are essential before determining the character of the therapy.

There is also enthusiasm now for the expectant treatment of small breast tumors on the basis of endocrine therapy. It cannot be pointed out too strongly that all definite breast tumors have malignant

potentialities, and regardless of the age of the patient they should be removed and microscopic investigation carried out. Only in this way may women be prevented from unnecessary risk due to malignancy degeneration.

—Wendell Long.

#### Arrhenoblastoma of the Ovary. J. M. Taylor, M.D., S. J. Wolfermann, M.D., and Fred Krock, M.D., Fort Smith, Arkansas. *Surgery, Gynecology and Obstetrics*, June, 1933, Volume LVI, No. 6, Page 1040.

These authors are presenting a second case of arrhenoblastoma which they say is the twenty-seventh in the literature. In this particular case the patient was a young woman of eighteen who had begun to menstruate normally, then had amenorrhea and the masculinization symptoms, followed by removal of the tumor and return of menstruation with return to female secondary sex characteristics. The pathology and etiology are here also reviewed.

**Comment:** These tumors, though rare, are of importance, primarily, because they signify the tremendous potentialities of the ovary, secondarily, because they may be of importance in determining the hormonal function of ovarian tissue; and thirdly, because the clinical recognition offers such definite and striking benefit to the patient.

—Wendell Long.

### EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

#### Ophthalmology in the Bible and in the Talmud. Benjamin L. Gordon, M.D., Atlantic City. *Archives of Ophthalmology*, Vol. IX, No. V, May, 1933.

The object of this treatise is to introduce in a short space the art of ophthalmology as practiced by the Hebrews of the Biblical and Talmudic days, and not a general discussion of medicine as practiced in that era.

It is not easy to definitely establish the standing of medicine among the ancient Hebrews because many errors were made in re-writing manuscripts and verifying the Aramaic names of the ocular diseases. Also the Talmud covered approximately 650 years and was the work of nearly 4,000 students.

In that remote period ophthalmology was limited to the diseases of the external eye since the ophthalmoscope was not invented until in 1845.

Those well versed in Talmudic teachings tell us the Hebrew word for eye is *ayin*, meaning a well or spring, since it was thought that the source of tears was located in that organ.

The eyelids are called *shmuros* (watchers) because the lashes protect the eyes against foreign matter.

According to the Talmud the eyeball is made up of the following coats: ocular conjunctiva, sclera, cornea, choroid, retina, iris, and lenticular capsule.

Ishon is the name given the pupil. Translated Ishon means little men. Babas-Ayin means the baby of the eye, hence the tiny image seen when looking into the eye. The iris (*Kesheth*) is located at the junction of the black and white coats and is named Sira.

Ophthalmia covering all known congestive dis-

turbances and blindness from any cause were the two classes into which ancient ophthalmology was separated.

The Talmud describes numerous diseases both of the eyelids and the eyeball. Those of the lids are: (1) Jabeleth, a hard wart beneath the bulging skin. (2) Dildul, a tumor on the edge of the lid. (3) Blepharospasm, blinking eyes. (4) Ptoxis, drooping eyelids. (5) Blepharitis ciliaris, supposedly caused from much weeping. (6) Trachoma or ophthalmia granulosa, caused by uncleanliness, improper diet, and the many sand storms. Before the exodus of the Hebrews in 3400 B. C., this disease was described under the name of "dripping eyes." (7) Ophthalmia neonatorum. (8) Zugdus, one eye weaker than the other. (9) Ankyloblepharon, adherence of the eyelids. (10) Phthyrasis palpebrarum (existing today in Palestine and Egypt among children), is black nits (pediculosis pubis) covering the eyelashes, causing redness and itching of the lids.

The various diseases of the eyeball as described in the Talmud are: (1) Dak, meaning macula, an opacity of the cornea which may be moveable or fastened tightly. (2) Chvarvar, a leukoma differing from dak in the denseness of the opacity. (3) Barkith (translated gray-star), Interstitial Keratitis, frequently mistaken for cararact. (4) Liphluh, pus in the anterior chamber. (5) Thebalul, coloboma of the iris and sclera. (6) Mayim (water) hakebium was the Hebrew name for cataract. In Arabic it was called al-ma amasil fel-ain, the flow of the water of the eye. Cataract was supposedly caused by a liquid running down from the head and lodging between the iris and the lens. (7) Mayim-Yerkuim (sea green star), glaucoma ophthalmia, arthritica, described a greenish discoloration of the pupil. It was also mistaken for a cataract and was the cause of much of the blindness of that time. (8) Enab, staphyloma of the cornea receives its name because it is a grape-shaped tumor, sometimes dark or gray but generally white in color. (9) Parasitic ophthalmia, ophthalmomyosis, was most unusual and caused by animal parasites entering the eye through the nose or lacrimal canal, going to the brain and causing damage to the eye. (10) Merida, exophthalmos, bulging of the eye. (11) Ukla, phthisis bulbi, a shrinking eyeball.

In Biblical times priests afflicted with "dripping eyes" or impaired vision were considered unfit for Holy office.

It is interesting to note the various treatments for some of the previously mentioned diseases. The bark of nut and fig trees, shavings of hides, application of verdigris with onion, rubbing the Milesian wool and cauterization followed by copper oxide were the favorite remedies for trachoma. Abstinence from water and thirst producing food was prescribed for cataract and crying was a good omen, since the flow of tears would eliminate the cause of the disease. The cure for staphyloma of the cornea was Tignah, a herb soaked in honey or a grape of corresponding color and dimension applied to the lesion. Another popular herb was Cohol. This was rubbed on the lid and was said to have aided the eyesight up to the age of 40, but after this age it was of no benefit. Later (25-50 A. D.), the white of an egg was used after operative methods were discussed. The galls of reptiles, animals, fish, and blood of a bat were used in corneal opacities. Common drugs in use were antimony, copper, iron, and lead. The leaves of Koriander, Busbarta and of Gargira were used on inflamed lids. Spittle is mentioned in the Bible several times as a cure of blindness and the Talmud prefers the spittle of the first born. Collyrium made

up in liquid, semi-solid, and powder was another remedy used by antiquity. In Palestine this was purchased at public markets. Pliny records that a cataplasm collyrium was made up of soaked bread, wine, milk, or white of an egg added to the regular ingredients.

Spectacles at first were worn only by priests and elderly scholars afflicted with eye strain.

Talmud discusses artificial gold eyes. Preuss however believes that the gold eyes found in Egyptian mummies were put in place after death.

Comments: From this most interesting and splendidly written article by Gordon I have taken only those cases which are comparable with the diseases and cures of today. This is only a short resume of a fifteen to twenty thousand word monograph with a lengthy bibliography entailing infinite care in its composition.

**Cavernous Sinus Thrombosis Following Submucous Resection.** By Noah D. Fabricant, Chicago. Archives of Otolaryngology. Vol. XLII, No. V, May, 1933.

Fabricant reports the case of a male, age 33, who was examined and a submucous resection performed three months from the time of the original and only examination. At the time of the examination the findings were negative except for a markedly deviated septum. The regular routine of a submucous resection was completed without any particular difficulty. The nasal cavity was packed lightly with petrolatum strips for twenty-four hours. Two days after the operation he was discharged from the hospital. Two days later he returned complaining of an excruciating headache, which persisted the next day. He was re-admitted to the hospital where for the next three days his condition was mildly septic. A differential blood count showed ninety per cent polymorphonuclears. The operative field appeared clean and apparently free of infection. The temperature was never high, the maximum being 101 degrees F. A roentgenogram showed only slightly increased density over the right maxillary sinus. Negative findings were reported after numerous consultations. Oedema of both eyelids was noticed on the eighth day after the operation. Following this development protrusion of both eyes occurred in a period of a few hours. There was a slight tenderness over both juglar veins. He became increasingly lethargic and expired the following morning.

Turner and Reynolds in a summary covering twenty-two instances of septic cavernous sinus thrombosis, state that the pathways of infection were as follows: "In thirteen cases, infection reached the sinus entirely by way of its afferent of efferent venous channels from the face, pharynx, air cavities and the cleft of the middle ear, in eight, the preliminary stage of the infective process was direct extension through the bone, followed by further spread to the sinus along the osseous veins; in the latter group, the primary focus was in the frontal, ethmoidal or sphenoidal air sinuses. In the remaining instance the infection passed to the blood sinus from the sphenoidal air sinus entirely by direct extension of the inflammation through the bone and dura mater."

Although there was no positive findings at autopsy the author concludes that the infection most likely occurred by direct extension by continuity of tissue from the sphenoidal air sinus into the cavernous sinus. He points out the importance of taking a careful history and doing a thorough examination before any



operation since a history of swimming and cold was later obtained from the family.

Other grave complications mentioned of this operative procedure are: generalized septicemia, meningitis, hemorrhage, abscess of the brain and erysipelas.

**Schwannoma of the Larynx.** By Harris H. Vail, M.D., Cincinnati. *Annals of Otology, Rhinology and Laryngology*. Vol. XLII, No. 2.

Theodor Schwann, a German anatomist, of the early part of the nineteenth century first recorded his observations of a tumor formed by the elements of the delicate protoplasmic envelope enclosing every internodal segment of the adult medullated nerve fiber.

Dysphagia, dyspnoea, and dysphonia were the prominent symptoms of Vail's patient, age 50. These had increased in severity over a period of three years.

After a tracheotomy had been performed a bilobular tumor over two inches in diameter was removed from its pedunculated point of attachment which was the right aryepiglottic fold just above the arytenoid. Ether anaesthesia and a Lynch-Killian suspension apparatus were used. This was accomplished after a failure under ether anaesthesia without a tracheotomy.

The intraoral route is here used successfully without the sequela of a vocal cord paralysis which sometimes occurs after the use of the external route which as a rule is the method chosen for removal of all large laryngeal tumors.

Literature shows three similar cases, two diagnosed as neurinoma and one as fibroma, where the external route was used at operation. Two of these showed a subsequent vocal cord paralysis of the side from which the tumor was removed.

**Nasal Obstruction in Children Due to Septal Abnormalities: What Shall We Do For Them?** Dr. William Wesley Carter, New York City. *The Laryngoscope* Vol. XLIII, No. V, May, 1933.

The author here discusses a problem which is constantly recurring to the rhinologist. It is easy to explain deviated septums in active male adults who have participated in athletics of all kinds while in college, but how account for them in females who have always led sedentary and protected lives? The author attributes these to unobserved falls or blows during childhood, seemingly so slight as to be without significance at the time. The normal infant has a somewhat flattened nose. Vertical pressure on the septum elevates it into the more prominent adult organ. A slight dislocation of the septum in a child generally becomes more noticeable as time goes on, even changing the facial expression until we have a saddle back deformity or a flattened nose due to the fact that the nasal bridge has not been lifted by the septum.

Carter states that 75 per cent of the Caucasian adults have deviated septums. Negroes and Mongolians are seldom so afflicted because they have characteristic broad flat noses.

Trauma, producing a hematoma with subsequent abscess is the most frequent cause of nasal obstruction and deformity. Early recognition of hematoma and free drainage to prevent abscess formation and destruction of nasal cartilage is stressed.

If there is obstruction following traumatism sufficient to prevent proper aeration, operative procedure should be instituted, or the health and the

proper development of the child will be impaired. Preservation of the structural framework is of paramount importance in all corrective operative work of this type.

Comments: V. P. Blair suggests that the volume of nasal plastic surgery would be greatly reduced if the proper care were to be given at the time of the injury in infancy and early childhood. I think the percentage of deviated septums in Caucasians as given above is very conservative. Rarely do I find a nasal septum which is perfectly straight.

**Filariasis Oculi.** By K. Koman, Pillai Nayer, and A. Kandaswami. *British J. Ophth.*, September, 1932.

The patient, an adult male, of middle age, lives in a community where filariasis is prevalent. For five days he noted an object floating in front of his left eye. Examination revealed in the vitreous just in front of the macula a thread-like wriggling worm, coiling itself and moving briskly. As accurately as could be determined it was about 2.5 mm. by .5 mm. After fourteen days of observation it disappeared. Five days later it reappeared in the anterior chamber, motility unimpaired. Subsequent observation of three days was terminated by opening the anterior chamber with a keratone. Despite elaborate precautions the worm was lost.

Micro-filaria (bancrofti) was repeatedly demonstrated in nightly specimens taken from the peripheral blood stream.

## TUBERCULOSIS

Edited By

L. J. Moorman, M.D.  
304 Osler Bldg., Oklahoma City

**Types of Tuberculosis Lesions Found in the Chest of Students of Nursing and Medicine.** By J. Arthur Myers. *American Review of Tuberculosis*, July, 1933.

This paper is written with a view of discussing development of tuberculosis in students of medicine and nursing and to give a description of the conditions which are now looked upon as leading to the development of such pulmonary lesions. A plea is made that more careful studies be made in this connection which will eventually lead to as near complete protection for students as possible.

The observations are made on students in the School of Medicine and the School of Nursing at the University of Minnesota. The students are divided into three groups: Group 1, cases concerning which almost nothing was known as regards tuberculosis until symptoms appeared; Group 2, cases about which little, but not enough, was known until symptoms appeared or the disease was detected by periodic examinations; Group 3, cases about which much was known when the disease made its appearance.

Group 1, included those students who came in for examination of their own accord because of symptoms of disease. There had been no tuberculin testing; no periodic examinations or X-ray films previous to the symptoms. In this group, only a few were fortunate enough to have such dramatic symptoms as pulmonary hemorrhage or pleurisy with effusion to arrest attention, while the majority presented minimal, or moderately advanced disease at the time of examination.

In the second group are included those about whom

some definite information was available before lesions appeared in the lungs but due to the intervening period, such previous information was not regarded as of much help. Several cases under this group are cited. A typical one is as follows:

A hospital intern, age 25, had been positive to tuberculin tests ever since he entered the School of Medicine. Films of chest made October, 1930, and June, 1931, showed no evidence of disease. In November, 1931, there was slight infiltration in the left second interspace with a questionable small infiltration in the first right interspace. The fact that the tuberculin test had been positive throughout his medical course was very helpful. The tuberculous lesions appeared later, so that, in the opinion of the author, they could be caused only by the reinfection or adult type of tuberculosis.

In the third group are those cases concerning which sufficient recent information was at hand to justify somewhat definite conclusions about the development of tuberculosis and the type of disease present. This group of cases was negative to tuberculin on admission to schools of nursing and medicine but periodic tuberculin testing subsequently revealed positive tests.

In this third group the series of cases presented are very much the same in that they were negative reactors to tuberculin on admission to the school but became positive reactors following definite exposure, either by nursing tuberculous patients or by service on tuberculous wards. In some of these cases the site of the primary infection, which gave rise to the allergic state and therefore a positive tuberculin test, was never definitely decided upon. In others, the infection progressed to a point of showing minimal symptoms or X-ray evidence.

The author points out from these illustrations that the adult tolerates well the first-infection type of tuberculosis. The author further concludes that the young adult who has been protected against tubercle bacilli and first becomes infected in adult life is in no greater danger of developing a rapidly destructive type of tuberculosis than the child. He also states that the so-called childhood infection is not necessary to protect the adult against destructive and fatal tuberculosis, but is always a fore-runner of this disease.

Because of the chronicity of the disease, the lesions found in groups 1 and 2; that is minimal, moderately advanced or advanced; could have been detected months, or even years, before the symptoms appeared if the authorities of the schools had been on the alert. That is, by demanding that tuberculosis be sought in the chest of every student entering the school of nursing and medicine, and that tuberculin tests and X-ray films be properly and adequately employed throughout every year the student remains in school.

In summarizing, the following are a few of the points brought forward by the author:

1. The incidence of tuberculosis among students and recent graduates of schools of nursing and medicine is so high that the disease may be looked upon as a serious menace to professional health-workers.

2. Nearly all of the cases examined by this author in the Minnesota School from 1920 to 1928 were in group 1, consequently these students had lost their best chance of ultimate recovery and had persisted as spreaders of tubercle bacilli.

3. Since 1928 tuberculin tests have been administered routinely to students entering the University

of Minnesota. Since that time fewer cases have been found in group 1 and a good many have fallen into group 2. The number of cases with moderately and far advanced disease has definitely decreased. Almost no advanced cases are seen except on entrance examinations.

4. The positive tuberculin reaction is the first manifestation of invasion by tubercle bacilli. It precedes X-ray evidence by weeks and months, and in many cases it remains the sole evidence of tubercle formation.

5. In no cases in which first-infection with tubercle bacilla has occurred in adult life has any serious illness accompanied it. Therefore, the development of rapidly progressive and highly destructive disease (galloping consumption) in adults who have not been previously infected is apparently a myth.

6. A positive tuberculin reaction, indicating allergy resulting from first-infection type of tuberculosis, is a definite liability, since the destructive forms of tuberculosis do not ordinarily develop in nature in its absence. Therefore, the longer it can be postponed, the better.

The Effects of Thoracoplasty on the Heart. By Olga S. Hansen and Henry W. Maly. *American Review of Tuberculosis*, February, 1933.

Comments on studies by these authors is given.

It has been shown in this series, that the intrathoracic pathological involvement incident to thoracoplasty almost invariably (in 87 per cent) displaces the heart more or less to one side or the other, but more frequently toward the unaffected side. The electrocardiograms also show a high incidence of postoperative change (63 per cent, including the slight ones), but these changes are neither consistent nor predictable, being in agreement with the X-ray findings in only a third of the cases. It would seem impossible to predict the probable electrocardiographic change from a study of the X-rays, or conversely to guess the type of X-ray findings from looking at the electrocardiograms.

It is probable that the electrical axis may be influenced by rotation of the heart on its longitudinal axis by fibrotic tissue affecting at times the base and at times the apex anteriorly or posteriorly, as has been shown experimental by Meek and Wilson and others.

It is probable that other factors such as bed rest, toxemia, and weight changes may affect the form of the electrocardiogram, since the control patients who had no gross mechanical changes were also variable in their complexes.

There has been no evidence of disturbance in conduction or of myocardial damage in electrocardiograms. Autopsy has shown no abnormalities in heart-weight nor more evidence of myocardial degeneration than is found in other patients dying of tuberculosis. Some of the changes in Q, R, S amplitude probably represents changes in muscle-tone associated with reduction in toxemia and increase in exercise and would appear regardless of the mechanics of collapse. The changes found in the electrocardiogram are probably due to extrinsic factors and bear no relationship to the conditions of the heart muscle.

Marital Tuberculosis. By M. Davidson. *Brit. J. Tuberc.*, April, 1932.

In contrast to the older authorities, who found a 4



per cent incidence of tuberculosis in married partners of tuberculosis patients, Ward has recently compiled figures which show 58 per cent of definite tuberculosis and 10 per cent of suspects among 156 married partners. Verco has shown that, in respect to conjugal infection, women appear to be three or four times as susceptible as men.

Since all individuals in civilized countries are infected with the tubercle bacillus and rendered allergic in the first few years of life an immunity is obtained which protects most of them from ordinary exposure. Married persons are no exception to this rule, but if one of the partners has advanced disease the risk of massive doses of tubercle bacilli and consequent exogenous reinfection in the consort are increased.

If precautions are observed there does not appear to be more risk to the married partner than to any one else in frequent contact with tuberculosis patients.

### DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.  
Lain-Roland Clinic, M. A. Bldg, Okla. City

Radium in Medical Use in the United States. R. R. Sayers, M.D., Radiology, April, 1933.

This history of radio-active minerals is reviewed briefly, showing that Professor Henri Becquerel first found that uranium salts produced photographic impressions through opaque substances. He assigned to Marie Shlodowska (later Madame Curie) the task of working out the nature of these rays.

It is interesting to know that the first commercial radium was produced from the mines of Joachimsthu, Bohemia. In the United States the Bureau of Mines became active in radium production in 1912, but it was 1914, when they united with the National Radium Institute, when the product was actually put on the market in Denver, Colorado. 8.5 grams had been produced when the plant closed in January, 1917.

At this time there are only two countries that are producing radium to any significant degree, namely, the Belgian Congo at Chinkolobwe, Katanga, and Czechoslovakia at Jackymov. The annual yield for the two countries totals about sixty-three and a half grams, ranging in price from sixty to seventy dollars a milligram.

Other countries yield radium in the respective order: United States, Canada, Russia, Portugal, Madagascar, England and Australia.

In the United States radium was first produced in 1913, whereas, the last production was in 1926, yielding a total of 202.523 grams. In order to determine the amount of radium in medical use in the United States, a questionnaire was sent out to all hospitals listed in the 1931 Directory of the American Medical Association, which information was requested as to how much radium they had on hand, what type of an applicator it was in, and what particular salt of radium, etc. It was estimated from the reports that 80,000 patients are treated annually; 287 hospitals and clinics reported a total of 85,800.26 milligrams of radium, and 128 of the 287 each had 75 milligrams of radium or more; 414 physicians reported they have 33,286.93 milligrams and 171 of the 414 each had 75 milligrams or more; nine laboratories and companies report 5,545.42 milligrams and 5 of the 9

each had 75 milligrams or more. Five states reported no radium in hospitals, and no radium is owned in the state of Wyoming. Individuals, companies, and hospitals estimate they need 117.4 grams more in addition to 124.7 grams already owned.

Since cancer has increased to second place as the cause of death, it is very evident that much more radium is needed than is now owned.

Dosage of Skin Therapy Expressed in International Roentgen Units. Joseph Jordan Eller, M.D., and Arthur Mutscheller, Ph. D., Archives of Dermatology and Syphilology, Vol. 27, No 4, April, 1933.

The authors in this article publish the results obtained by a group of different dermatologists who have been working on the problem of standardizing X-ray dosage for skin therapy. Heretofore, the unit has been dependent upon obtaining the slightest degree of erythema on the skin with certain factors, or the smallest dose that produces a temporary alopecia of the scalp. It has been found that on an average it requires 340 roentgens (i. e., international roentgens) to obtain the clinical signs above mentioned. This information is very valuable in standardizing X-ray dosage.

The Trichophyton Test (Report of 350 cases). Emanuel Muskatblit, M.D., and William Director, Archives of Dermatology and Syphilology, Vol. 27, No. 5, May, 1933.

In view of the widespread fungus infection commonly known as "athlete's foot" and its multiple ramifications, more knowledge is being sought by general practitioners in regard to correctly diagnosing this disease. The trichophyton test has been in use for a number of years, and this article deals with 350 cases tested by the authors. Their summary and conclusions are quoted:

#### Summary

1. A method of preparation of a polyvalent fungus extract containing endoproduts and exoproduts of epidermophyton, trichophyton and microsporon is described.
2. Three hundred and fifty patients were tested intradermally, of whom 300 clinically were mycotic and 50 were not mycotic.
3. Nonspecific reactions were observed in 4 per cent of nonmycotic cases.
4. The trichophyton test gave a positive reaction in 72.3 per cent of cases proved mycotic by the laboratory.
5. Clinical diagnosis was more frequently corroborated by the test than by the laboratory examination; for example, in clinically mycotic cases the test was positive in 60.3 per cent, while laboratory examination was positive in only 39.7 per cent.
6. Patients with highly inflammatory lesions gave a higher percentage of positive tests; however a positive reaction was found in many cases with limited and slightly inflammatory lesions.
7. The test was positive in cases in which the infection was due to various fungi of human and animal types, particularly in those caused by epidermophyton interdigitale.
8. Monilia infections of the skin also gave a positive reaction but less frequently than cases due to

filamentous fungi (trichophyton, epidermophyton and microsporon).

### Conclusions

1. The intradermal test with fungus extracts,, while not absolutely specific, is of considerable value in the diagnosis of fungus infections of the skin due to filamentous as well as to yeastlike fungi.

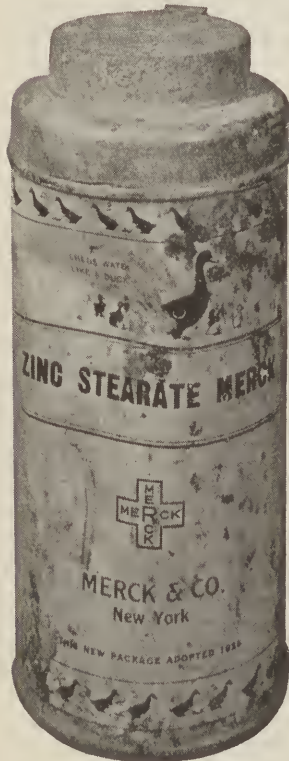
2. Common fungi such as trichophyton violaceum, microsporon audouini and epidermophyton interdigitale yield an effacious preparation when a mixed polyvalent extract is made of freshly isolated strains.

3. General allergic hypersensitiveness of the skin develops not only in deep inflammatory mycoses but also in many cases of superficial type.

4. Epidermophyton interdigitale, the most common causative agent of dermatophytosis in this country, is apt to cause a considerable degree of cutaneous allergy."

### AN INTERESTING LETTER

Merck & Co., Inc.,  
Rahway, N. J.  
Dear Sirs:



I was cleaning out an old well yesterday that hadn't been used, cleaned or lived around for over five years, and what do you think I found? One of your small cans of Zinc Stearate Merck Powder in the bottom.

I picked it up, saw the pictures of all the ducks and read all the printing on the can. When I read—it sheds water like a duck—that caused me to investigate and what do you think I found when I removed the top? A can about half full of powder and the remainder of the can filled with water. I poured the water off and let the powder remain in the can. The powder was just as dry and dusty as any powder could be.

I think your powder is a little better than you advertised it; you said it would shed water like a duck. Well I believe a duck would leak a little if it would stay in water for five years without coming out. I am almost sure the can of powder had been in the well for at least five years, if not longer.

Your truly,  
JOSEPH MURPHY,  
West Louisville, Ky.

### THE DOCTOR AND POLITICS

Are the members of the medical profession aware of their entire responsibility to the community in which they live? Is the Oklahoma Medical Association aware of the responsibility which it has in protecting the medical profession in Oklahoma?

Throughout history it will be found that the physician and the position which he occupies in the community and the state within which he lives characterizes to some extent the degree of civilization and the culture and protection by which he is surrounded. By the word protection, I do not mean the keeping of the body from harm or the restraint of banks or loan companies from the foreclosure of notes and mortgages, or the preservation of a moral or social standing. But I do mean the preservation of the medical man's possibility by laws, that will guarantee him an equal right with any of the other business or professional men, to collect their fees.

Medical service has a definite market value. The benefits which are accomplished through personal administration of scientific principles cannot be fully compensated for by the dollar. The honest man pays you your fee and extends to you his undying gratitude for your service. Laws are not needed for this type of individual but on the other hand, there is a class of our citizenship which feel that it is a mental and physical accomplishment to accept of you your service and then refuse to pay. The merchant can recover his goods, the laborer can establish a lien on property, the lawyer can and does have ample time to draw up a binding contract; but the medical man acts in an emergency and if he attempts to ascertain who will be responsible for the debt, he is classed among the money grabbers and advertised from mouth to mouth among the laity as a Doctor who places the dollar in advance of his patient.

Medical service is a commodity that is listed among the economic necessities of society in general, of industry and of the individual. Therefore, it is right that society, industry, and the individual pay the Doctor in proportion to the time he uses while rendering professional service. It is no more incumbent that the physician dispose of his time gratis than it is upon the business man to dispose of his wares free.

There should be uniform and consistent laws in the State of Oklahoma, and the citizenship of the State should be taught to recognize that the Doctor is a necessity to the community. Laws should be constituted whereby the medical profession will have equal rights with other professional or business enterprises to collect that which justly belongs to them.

I do not wish to insinuate that the people who are too poor to pay for medical attention should be neglected. It is not right that a doctor or a group of doctors in a community be forced by public sentiment to carry the burden of attending the people who are not financially able to recompense the medical man for his service. If a man disobeys the law and he is brought to the bars of justice, the court appoints and the county pays a lawyer to represent him. If the individual is kept in jail, food, and if necessary, raiment and medical care is provided for him. If this man's wife or children become ill, public sentiment is extended to her, the doctor makes his daily trips



or the necessary medical attention is rendered and in the larger majority of cases the doctor receives no compensation, not even a paltry sum from the county. If this family does not have funds or raiment, the county provides the same, or if not provided by the county, first one grocery store then another and another and finally by some philanthropic organization. They may not receive any compensation but the responsibility is divided among many, even this principle is wrong. The burden of caring or providing for the sick and poor should be based upon ad valorem taxation and each individual should pay their prorated share, thus relieving the burden from the shoulder of the medical profession. At this point enters the title of the paper, "The Doctor and Politics."

The perfect physician will have to be a genius to begin with, unless he knows something in addition to doctoring, he must fall short of the ideal. The majority of medical men are public minded but they have forgotten to exercise it or in some cases, failed to recognize their responsibility in moulding the public policies in their community, city and state. Therefore, it behooves the medical man who is qualified by right of education, reasoning, thought and intimate knowledge of the needs of the people, in the community, to fill various public offices. If the medical man himself does not care to sacrifice time and energy for his community, he should at least pick out some public spirited citizen to whom he can express his opinions and ideas, and with whom he can exert sufficient influence to help mould the public policies. Extend to this man the influence which you yourself have, and see that he is elected.

There is no profession or group of men in the State of Oklahoma who can yield such a powerful political influence as the Oklahoma State Medical Association. This influence is built up from the doctor in the community, to the county society, then to the district organization and finally to the state association. This powerful

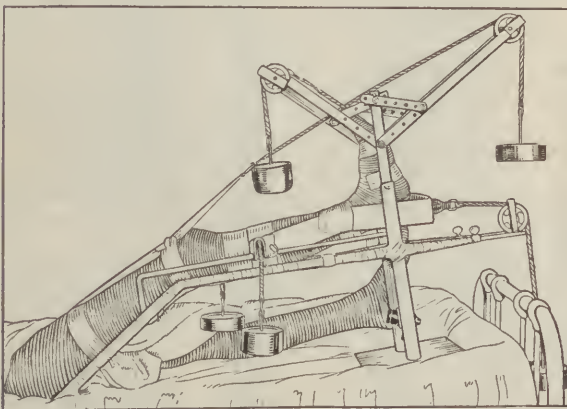
organization composed of educated public minded citizens lies dormant and allows less powerful political machines to elect men to public offices to make our laws and another group of men to execute them.

I have just recently finished my first experience as a State Senator of Oklahoma. While there I felt the powerful influence of lobbyists of various organizations. Everyone fights to create new laws or maintain those already in effect which protects their business or profession. The insurance companies, both local and foreign, spent many dollars in various forms of entertainment to forward their selfish interest where only a few thousands of dollars would be saved to each company. In comparison to this, there were only three lonely doctors who came on three separate occasions to protect the interest of the medical profession, wherein, many millions of dollars of the doctors' money, and human lives were at stake.

Members of this Association, we cannot continue to go on in this languid and careless fashion, expecting to place the high calling of our profession on a sound business basis. I am not advocating that the doctor or this medical association forestall any of its scientific advancements to further the political ambitions of any individual, but I am calling to your mind, that science and business in our profession must go hand in hand. That we cannot expect a farmer, lawyer or a banker to make laws that are just and equitable to the medical profession. The medical profession themselves must have a representation in the law making body. The doctors should exert their influence upon the members of the legislature. In other words, I call upon the medical men within the hearing of my voice to take an active part in the election of public officials, especially to lend their influence to the election of state officials and to become intimately acquainted with their representatives and senators.

I will also suggest that the Oklahoma State

## Look at This Fracture Suspension Frame



A sample will be sent to any reliable surgeon or Hospital in order that they may try it out. It has the following features as to fractures:

1. Fracture of the lower extremities.
2. Diabetic ulcers, elevation and heat treatment.
3. Arthritic cases, elevation and heat treatment.
4. Buerger's Disease, elevation and heat treatment.
5. To prevent shortening deformity after fracture.
6. Various forms of paralyzes where heat and elevation are indicated, and varicose ulcers.
7. It eliminates cumbersome scaffolding around bed.
8. It eliminates plaster casts.
9. It has five point adjustable suspension, longitudinal and transverse.
10. It is made of aluminum, does not show in X-ray, is light in weight and is non-corrosive.
11. It has the proper knee angle as approved by the Medical profession, affording two ways preventing ankylosis.

It is not only endorsed but in daily use by Oklahoma Orthopedists and surgeons.

We would like for you to place your order for one of these suspension frames at the reduced price of only \$35.00—\$10.00 cash, and \$5.00 per month on balance.

**G. LANGE**

**Muskogee Artificial Limb and Appliance Company**

**MUSKOGEE, OKLAHOMA**

Medical Association at this session appoint a special committee; to consider the present public health laws of the state, to outline a complete program for the care of the sick so that the burden can be equally borne by all; and to advance measures to enact as laws that will aid the doctor to collect his just fees. This com-

mittee report can be studied and ratified by the association at its next annual meeting after which a uniform influence should be brought to bear on the legislature which will meet in 1935, so that the entire program of medical advancement and equality can be made a law.

LOUIS H. RITZHAUPT, M.D.

## REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, June 7th and 8th, 1933. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Evans, Fred Green	1903	Tiptonville, Tenn.	Univ. of Tenn.	1932	Afton, Okla.
Loney, Wm. Robt. Roy	1901	Hope, N. D.	Univ. of Minn.	1926	Tulsa
Russell, Geo. Richard	1899	Hamler, Ohio	Western Reserve	1899	Tulsa
Beatty, Samuel Richard	1903	Beverly, Ohio	Univ. of Wis.	1932	Okla. City
Mattison, Wm. Lawrence	1903	Columbia, S. C.	Northwestern	1932	Calvin Okla.
Sewell, Dan Roy Jr.		Jacksonboro, Tex	Wash. Univ.	1931	Okla. City
Serwer, Milton John	1904	Detroit, Mich.	Rush Med. Col.	1931	Okla. City
Peacock, Berenice Grace	1900	San Francisco, Calif.			
Reed, Charles Bruce	1909	Denison, Tex.	Univ. of Calif. Baylor Med. Col.	1928 1932	Okla. City Durant, Okla.

(The following took the examination, and passed, and licenses will be issued when approved internship certificate is filed with the Secretary).

Winston, John R.	1908	McMillan, Okla.	Univ. of Okla.	1933	McMillan, Okla.
Fryer, Samuel R.	1910	Muskogee, Okla.	Univ. of Okla.	1933	Okla. City
Traverse, Clifford A.	1908	Byron, Okla.	Univ. of Okla.	1933	Okla. City
Wainwright, Tom Lyon	1909	Hattiesbur, Miss.	Univ. of Okla.	1933	Okla. City
Reed, Karl Asbury	1902	Guthrie, Okla.	Univ. of Okla.	1933	Okla. City
Tisdal, William C.	1907	Cordell, Okla.	Univ. of Okla.	1933	Elk City, Okla.
Angus, Donald A.	1907	Lawton, Okla.	Univ. of Okla.	1933	Okla. City
Ray, Raymond G.	1907	Downs, Kan.	Univ. of Okla.	1933	Okla. City
Barb, Thomas J.	1910	Merkel, Tex.	Univ. of Okla.	1933	Norman, Okla.
Shelby, Hudson S.		Savannah, Tenn.	Univ. of Okla.	1933	Okla. City
Luton, James P.	1907	Lindsay, Okla.	Univ. of Okla.	1933	Okla. City
Russell, Lum E.	1910	Cyril, Okla.	Univ. of Okla.	1933	Okla. City
Coppedge, Orville N.	1902	Jennings, Okla.	Univ. of Okla.	1933	Okla. City
McMillan, James M.	1904	Atlee, Ark.	Univ. of Okla.	1933	Okla. City
Hackler, John F.	1910	Tahlequah, Okla.	Univ. of Okla.	1933	Tahlequah, Okla.
Crane, Francis S.	1909	Texas	Univ. of Okla.	1933	Chandler, Okla.
Smithson, Carl E.	1906	Alva, Okla.	Univ. of Okla.	1933	Okla. City
Sturm, Chas. Edward	1905	Marysville, Mo.	Creighton Med. Col.	1933	Okla. City
Eads, Chas. H.	1903	Mt. Carbon, W. Va.	Univ. of Okla.	1933	Tulsa
King, Everett G.	1910	Colony, Okla.	Univ. of Okla.	1933	Cordell, Okla.
Tichenor, Ernest L.	1903	Morganfield, Ky.	Univ. of Okla.	1933	Okla. City
Breco, Davis	1899	Canton, Tex.	Univ. of Okla.	1933	Ada, Okla.
Haynie, Weldon K.	1907	Aylesworth, Okla.	Univ. of Okla.	1933	Durant, Okla.
Greer, Rex	1906	Woodford, Okla.	Univ. of Okla.	1933	Okla. City
Huggins, James R.	1904	Chickasha, Okla.	Univ. of Okla.	1933	Okla. City
Ruth, Weldon K.	1909	Okeene, Okla.	Univ. of Okla.	1933	Okeene, Okla.
Reed, Chas. W.	1909	Okla.	Univ. of Okla.	1933	Okla. City
Messenbaugh, Joseph F.	1910	Okla. City	Univ. of Okla.	1933	Okla. City
Perry, Fred T.	1908	Texas	Univ. of Okla.	1933	Okla. City
Ford, Harry C.	1908	Middletown, Mo.	Univ. of Okla.	1933	Tulsa
Woodson, Orville M.	1907	Poteau, Okla.	Univ. of Okla.	1933	Poteau, Okla.
Smith, Wendell L.	1907	Topeka, Kan.	Univ. of Okla.	1933	Tulsa
Lingenfelter, Paul B.	1907	Clinton, Okla.	Univ. of Okla.	1933	Okla. City
Shipp, Jesse D.	1910	Hugo, Okla.	Univ. of Okla.	1933	Idabel, Okla.
Bailey, Carl H.	1909	Ft. Worth, Tex.	Univ. of Okla.	1933	Okla. City
Peter, Maurice L.		Oxford, Kan.	Univ. of Okla.	1933	Okla. City
MacLeod, Sherburne	1906	May, Okla.	Univ. of Okla.	1933	Hooker, Okla.
Butts, Imogene	1909	Holdenville, Ok.	Univ. of Okla.	1933	Holdenville, Okla.
Sturgeon, H. Violet	1908	Hennessey, Okla.	Univ. of Okla.	1933	Okla. City
Cantrell, Emma Jean	1907	Mounds, Okla.	Univ. of Okla.	1933	Okla. City
Craft, Wilma	1908	Vermont, Ill.	Univ. of Okla.	1933	Okla. City
Funk, Gustavus DeLana	1904	Marysville, Mo.	Univ. of Okla.	1933	El Reno, Okla.
Watson, Price T.		Erick, Okla.	Univ. of Okla.	1933	Blair, Okla.
Jobe, Virgil Ro.	1902	Lincoln, Ark.	Univ. of Okla.	1933	Okla. City
Hoover, Wilkie Dee	1908	Wynnewood, Ok.	Univ. of Okla.	1933	Tulsa
Darrrough, James B.	1910	Vinita, Okla.	Univ. of Okla.	1933	Vinita, Okla.
Lambke, Phil M.		Byron, Okla.	Univ. of Okla.	1933	Amorita, Okla.
Speed, Henry K. Jr.	1909	Sayre, Okla.	Univ. of Okla.	1933	Sayre, Okla.
Hackler, Harold W.	1906	Westville, Okla.	Univ. of Okla.	1933	Tahlequah, Okla.
Kerr, Walter C. H.	1903	Peoria, Ill.	Univ. of Okla.	1933	Clinton, Okla.
Parsons, Orval L.	1907	Enid, Okla.	Univ. of Okla.	1933	Okla. City
House, Rex Clayton	1909	Carnegie, Okla.	Univ. of Okla.	1933	Okla. City
Shiflet, Albert Woods	1906	Lebanon, Mo.	Univ. of Okla.	1933	Okla. City
Rogers, Galen A.	1906	Waynoka, Okla.	Univ. of Okla.	1933	Nicoma Park, Ok.
Curb, Delos Griffin	1897	Leon, Okla.	Univ. of Okla.	1933	Okla. City
Lee, Robert Ray		Dublin, Tex.	Univ. of Okla.	1933	Okla. City



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## SOME PRACTICAL POINTS IN HAND SURGERY

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As it is almost four years since I gave up the practice of traumatic surgery, it is quite impossible for me to present patients, statistics or photographs. It seemed inadvisable, therefore, to attempt a detailed analysis of any one particular field of hand surgery. I have decided, accordingly, to refer rather briefly to several different problems, confining my remarks to the presentation of some original modifications of common procedure and a brief review of some of the more important general principles.

### ANESTHESIA

I should like to draw your attention, particularly, to the very wide application of local anesthesia in hand surgery. It is worthy of consideration in every hand injury.

One must decide, in every case, whether or not to use anesthesia, and then between general and local.

The former question is easily decided. Unless simple inspection clearly indicates that no treatment, beyond sterilization and dressing, will be required, anesthesia should be used. In order to spare the patient pain, one is prone to omit a complete examination and such complications as foreign bodies and severed tendons and nerves are frequently overlooked.

The decision between local and general anesthesia is almost as easily made. Local anesthesia offers the following advantages:

1. Safety.
2. No extra assistant is required.
3. It may be introduced to facilitate the examination and still be serviceable after preparations for repair are completed.

ed. One would hesitate to give patient so long a general, or to anesthetize him twice.

4. The patient, by active muscular movements, is able to assist in the identification of severed tendons or nerves.
5. The patient may leave the office immediately after treatment is completed.

The use of local anesthesia may be contra indicated in such conditions as tenosynovitis or in any extensive infection and, should a skilled anesthetist be available, nitrous oxide is probably to be preferred. In my own practice, I did not have such expert assistance and these cases were treated by nerve block at the wrist or elbow. No bad effects, attributable to the anesthesia, were noted in any case.

Contrary to common opinion, children are usually even more favorable subjects for local anesthesia than are adults.

### ANTISEPTICS

Three questions may be asked regarding the value of an antiseptic in the treatment of injuries:

1. Is it an efficient germicide?
2. Does it cause pain?
3. Does it cause "weeping," or does it promote dryness of the area?

In my experience, 20% mercurochrome, in water, is the most nearly ideal. By a series of comparative tests, carried out in the Pelton Clinic, Elgin, Ill., it was decided that 10% mercurochrome gave approximately the same results as iodine and that increased strengths, up to 20%, gave much greater protection. This solution was in use there, as a routine, and it was while working with them in 1927 that I adopted it. Mercurochrome, even in this concentration, causes practically no pain and it usually exerts a prompt and very definite anesthetic action. For keeping

the area dry, I have used nothing that compares with it.

#### DRESSING

The average accidental wound is dressed too frequently. It has been my practice to inspect the wound in approximately forty-eight hours and, if it shows no evidence of infection, not again until removal of the sutures. Infected wounds will, of course, require different management but infection should be so rare as to be exceptional.

One cannot be too gentle. It is seldom pardonable to produce pain during the change of a dressing and, except in those cases associated with loss of skin surface, where hemorrhage has been controlled by pressure, one should never cause bleeding. The loss of even one drop of blood means that healing tissue has been disturbed and progress retarded. This does not, of course, include the deliberate removal of exuberant granulations or the occasional necessary secondary debridement.

#### INCISED AND LACERATED WOUNDS

The three fundamentals for the rapid healing of incised and lacerated wounds are perfect hemostasis, accurate suture and rest. The first two may be considered together, since the easiest and most efficient method of hemostasis is by suture.

It is frequently claimed that one guards against infection by leaving the wound open, "for draining." To my mind, this is a fallacious and dangerous doctrine. The greatest menace to a wound is the blood clot between the raw surfaces and, to whatever extent we can reduce its size, we protect the patient from infection. Unless associated with loss of surface, no external wound can be considered as properly cared for so long as there is any hemorrhage.

If this dictum be accepted and practiced, one may almost entirely dispense with drainage in recent wounds. I doubt if I drained more than three cases, during my last year of industrial practice, and increasing experience tended to restrict rather than to extend the use of drains.

The combination of 20% mercuriochrome, careful suture and the restriction of drainage, gave me healing without clinical infection in more than 99% of cases.

I should like to make a plea for the suture of accidental wounds of much

smaller size than is the custom. In my opinion, if the skin edges gape and fail to remain in spontaneous approximation, that wound will heal more rapidly, more neatly, and with less risk of infection, if accurately sutured.

Four sutures to the inch are probably the minimum and six are generally to be preferred. More may be indicated in irregular wounds or on wrinkled surfaces.

One frequently sees a wet dressing applied to a freshly sutured wound. One might as well spare the trouble of suturing. The first essential of wound repair is the coagulation of the thin film of exudate between the opposed surfaces. This cannot coagulate in the presence of a wet dressing and its prevention, in infected wounds, is the sole value of such treatment.

I believe that the too early removal of sutures is responsible for the dissatisfaction of many men with the results of the suture of accidental wounds. Even after a wound has completely epithelialized, the underlying tissues may be unable to withstand the strain of movement and the wound becomes reopened. Such non-swelling material as horsehair may be left in the skin almost indefinitely. In the thick skin of the palm of the laboring man, I have often allowed sutures to remain for as long as three weeks. In the meantime, the man may return to work without fear of reopening his wound and without pain. He should, however, keep a small dressing over the area and must keep the hand dry. It is usually advisable to wear a glove.

I have found it advantageous to advise that the suture line be smeared lightly, after each washing, with some simple greasy preparation. This precaution, persisted in for a week or ten days after complete surface healing, will prevent cracking of the new and tender epithelium.

You are all familiar with the oblique wound, almost parallel with the skin surface; the type that reflects a flap. Under routine circumferential suture, one usually gets a hematoma under the flap, with probable infection and a congested, elevated area that may persist for months. This is easily prevented by one or two stitches through the centre of the flap, into the underlying tissue. This simple method offers all the advantages of a drain with none of its disadvantages.

Catgut ligatures, buried in the superficial fascia, are a common source of dis-



appointment, either in the form of a sinus or because of a red and swollen suture line. In the hand and wrist, it is practically never necessary to bury a ligature. For the control of superficial venous bleeding, as is so common from the dorsal venous arch, I recommend the following procedure.

Close the wound by interrupted mattress sutures, so placed that each cut vessel is enclosed by one suture. This everts the skin edge and is not a satisfactory closure, in itself. Now close in the usual manner with interrupted sutures. When the wound is dressed, at the end of forty-eight hours, remove the mattress sutures only. The everted skin edges fall back into place, hemorrhage does not recur and the interrupted sutures retain approximation until healing is complete.

For deeper bleeders, the "figure of 8" suture is highly satisfactory.

The use of electrocoagulation now offers a still more desirable method for the elimination of ligatures and I feel that it will soon take a prominent place in hand surgery. Technique, such as now used in operations on the brain, could be readily applied to the hand with, I am sure, greatly improved results.

#### CRUSHING WOUNDS

The most common crushing wound is one involving the nail. These may be of three grades of severity:

1. The subungual hematoma.
2. Lacerations along the edge of the nail.
3. The partially or completely detached nail.

In the first two, the main aim of treatment is to prevent infection beneath the nail. This can usually be accomplished by painting with mercurochrome, along the nail edges and under its tip. I shall describe a simple method of introducing a solution beneath the nail.

Compress the soft tissues of the finger tip tightly against the nail. Paint around and under the edges of the nail, making sure that there is no break in the film of solution. Suddenly press the soft tissues away from the nail and the solution will pass back as far as the nail is separated. I have repeatedly, by this method, forced mercurochrome along the track of a sliver, as far back as the lunula.

The subungual hematoma may require

drainage, both for the patient's comfort and to avoid the persistent pigmentation. The usual method is to drill through the nail but this drill hole will be a nuisance until it has been outgrown. I greatly prefer a small incision, as made with a No. 11 Bard-Parker blade, from the tip of the finger and close along the palmar surface of the nail. This gives satisfactory decompression, requires only a few seconds and closes as soon as it ceases to be required. One should take ample precautions to guard against the introduction of infection.

The partially detached nail should be replaced as accurately as possible, after painting the nail bed and both surfaces of the nail with mercurochrome. It protects the finger, saves the pain of removal and gives a more normal shape to the new nail and, incidentally, to the finger. A safe rule is to not remove the nail until it can be done without pain or bleeding, seldom earlier than six weeks.

One rare complication of crushing injuries to the fingers merits special mention. The extensor tendons are very close to the proximal and middle phalanges and may become adherent. I have seen this in two cases, one of them under my care from the beginning, and am satisfied that early movement would have prevented this serious disability.

#### PUNCTURED WOUNDS

When compared with the total number of punctured wounds, most of which receive no treatment whatever, the number becoming clinically infected is small indeed. For this reason, I believe in conservative treatment—sterilization of the surface, a sterile dressing, local rest and instructions to the patient to report at once, should the area become swollen or increasingly painful. Very rarely does any complication follow such management.

Unless the evidence of a foreign body be very definite, a punctured wound should not be explored, or even enlarged. The part should be examined under the fluoroscope and thoroughly palpated. If no evidence of foreign material can be demonstrated, one is justified in adopting a waiting attitude. Earlier in my experience, I have often explored on the strength of the patient's story of a retained splinter of wood. Only once have I found anything not showing on careful examination,

a  $\frac{3}{4}$  inch splinter of wood lying longitudinally in the tendon sheath.

Nor need one incise on the first evidence of a local inflammatory process. Passive hyperemia, produced in a simple way to be described later, will frequently abort the infection. The two areas which one may be less reluctant to incise are the distal closed space and the palmar surface of the proximal interphalangeal joint.

I have never seen a serious complication follow this method of watchful waiting.

#### THE DISTAL CLOSED SPACE

The distal closed space, frequently called the anterior closed space, is the palmar surface of the terminal phalanx. Because of its special anatomical features, infections of this space are frequently complicated by destruction of the bone, the common "bone felon."

Although incision, in order to save the bone, must, as a rule, be made before pus has collected, this space need not be opened at the first evidence of infection. One should remember that the pressure in the firmly walled off space is the cause of bone necrosis, actual bone infection following later. For this reason, punctured and not incised wounds are the more likely to give trouble.

The red, painful finger tip is not sufficient indication for incision, but the tense, hard, throbbing phalanx requires immediate operation. One should not depend much on color changes as the skin may be hard and thick and is frequently stained with iodine.

At the first evidence of infection, or, better still, as a routine, passive hyperemia should be instituted. This can readily be done by slipping an ordinary rubber band around the proximal end of the finger, with just sufficient tension to obstruct the superficial veins but not enough to occlude the arteries. I have had my patient do this for ten minutes every hour, until improvement followed or until increasing tension indicated drainage. Under this management, many escape incision.

For the usually described treatment, splitting the finger tip and putting in through and through drainage, I have only the most emphatic condemnation. It is needlessly mutilating, heals slowly, leaves a deformed finger tip and is no more efficient than simpler measures. I recom-

mend a lateral incision, parallel with edge of the nail and 1-8 inch from it, beginning opposite the proximal end of the nail. This may be carried slightly across the end of the finger, never to the middle line, but may usually be stopped at the distal end of the nail wall. Point the blade of the knife at such an angle that it will reach, or even slightly cross the midline from  $\frac{1}{8}$  to  $\frac{1}{4}$  inch from the palmar surface, depending on the size and shape of the finger. This incision cuts the radiating fibres, avoids the tendon sheath, periosteum and, usually, the digital vessels. I have never seen a case fail to respond to this treatment and have never made a bilateral incision.

#### HANGNAIL

May I call your attention to a common, painful and embarrassing condition, the ordinary hangnail. This seems to be considered beneath the notice of the surgeon, but it certainly may engage the serious consideration of the patient.

They may be readily prevented, and the uninfected ones cured, by massaging the nail wall and the eponychium with some simple ointment. I have usually recommended Burroughs-Wellcome Hazeline Cream. Some patients may require an application several times daily, but once, on retiring, is usually sufficient. If already bleeding, it is potentially or actually infected and, under such circumstances, mercurochrome and passive hyperemia may be indicated. Neglected cases frequently lead to paronychia.

#### TENOSYNOVITIS

Although having no original contribution on this subject, I feel that a review of the diagnostic principles may be useful.

The tendon sheath is a completely enclosed, elongated tube. If one thinks of the ordinary sausage-shaped rubber balloon, most of its signs may be easily visualized.

Infection of a synovial surface causes hypersecretion and the sheath becomes filled with fluid under pressure. This point is the basis of the characteristic physical signs.

1. The swelling is uniform and confined to the limits of the sheath, not involving the dorsum or the distal closed space.

2. Pressure over the sheath causes an increased pressure within it, while pressure on the dorsum, sides or distal phal-



anx is not transmitted to the sheath or its contents. Therefore, pressure over the sheath is intensively painful, in other areas not more than mildly uncomfortable.

3. The maximum capacity for any given surface area is found in the sphere. A collection of fluid in the sheath tends to increase its diameter and decrease its length. This causes flexion of the finger.

4. Extension of the digit increases the length of the sheath at the expense of its diameter and capacity, thereby increasing the pressure within it, and causes pain.

This clinical picture of uniform swelling on the palmar surface, tenderness limited to the sheath, flexion and pain on passive extension, is sufficient for the diagnosis of tenosynovitis, and requires only minor modification for the different sheaths.

Such a condition demands immediate and generous incision, unless one is satisfied that the tenosynovitis is secondary to some neighboring disturbance and is not infectious. I know of only one condition likely to lead to confusion. That condition is arthritis of the metacarpophalangeal or interphalangeal joints. The differential diagnosis rests on the demonstration of a red, tender, possibly swollen area on the dorsum, corresponding in outline to the affected joint or joints, with pain in the joint on passive flexion. Joint pain produced by passive extension will be masked by the pain in the sheath.

The most outstanding case in my experience was a gonorrheal arthritis of the metacarpophalangeal joint in a young girl. The correct diagnosis was possible, on the signs mentioned above, and confirmed by a positive vaginal smear.

#### CHRONIC SUPERFICIAL INFECTIONS

Probably everyone has seen cases of chronic superficial staphylococcic infection. These are usually seen as a complication of injury to the dorsum of the fingers or hand and may persist long after the original wound has healed by primary union. They are very resistant to treatment and spread intradermally, greatly resembling ordinary impetigo.

I should like to recommend silver nitrate, 1%, more conveniently as an ointment, as an apparent specific in these cases. This may stain the skin so should be used with caution, if at all, on the face.

#### THE LUMBRICAL CANALS

Many men hesitate to open the lumbrical

canals, apparently because they are not sufficiently familiar with the anatomy of the hand. For the general surgeon the industrial surgeon and the general practitioner, this is the most important area in the body. I recommend the anatomy of the hand and forearm as your next postgraduate study. In the meantime, the following point may be found useful. If you hyperextend your own fingers at the metacarpophalangeal joints, you will note an elongated elevation opposite each interdigital cleft. These overlies the lumbrical canals. The lumbrical muscle lies along the medial side with the digital vessels and nerve lateral and partially superficial to it.

#### SUMMARY

I have presented certain practical points in hand surgery. These have been of great service to me and of value to my patients. They are offered in the belief and hope that you, also, may find them useful.

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#### OCCURRENCE OF BORDET-GENGOU BACILLUS

The results of the examinations (of 3,897 specimens, 2,144 of which came from pertussis patients) of Bjorn Kristensen, Copenhagen, Denmark (Journal A. M. A., July 15, 1933), are comparable with the hypothesis that the Bordet-Gengou bacillus is the etiologic agent of whooping cough. The cough-plate method has been used for sixteen years at the State Serum Institute in Copenhagen and has proved to be of practical value. It is the best method for diagnosing the disease early. An isolation period of four weeks after the onset of the typical paroxysm has in practice been sufficient for school children. Healthy carriers have not been found outside of families in which whooping cough exists. Abortive and quite atypical cases of whooping cough are frequently found, and the author believes that they play an important part in the spread of the disease.

## THE CRIPPLED HAND

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Deformities of the hand constitute one of the very serious catastrophies that befall mankind. Next to permanent brain injury and blindness, serious loss of the use of the hands does more to incapacitate one in our social lives, than probably any other single factor. We are going to briefly sketch in this talk, some of the more common conditions, which can be easily remedied. For purposes of presentation, we will divide them into several classes.

### CONGENITAL DEFORMITIES

(a) *The Supernumerary Finger*, that is, the extra little finger and the extra thumb. We operate these cases as soon after the tenth day as possible so that the baby may develop that finger which is left. It is very difficult to state which of the fingers to remove, or which thumb, but it is usually best to remove the external finger or thumb, because they are usually not as well developed. There are usually present two facets on the metacarpal bone which should be left alone. The extra tendon, which is always present, should be sutured into the remaining tendon so we may have complete development of the muscle, rather than atrophy of half of the muscle. These operations require exceeding care in detail, but if well done, bring very brilliant results.

(b) *The Web Fingers: (Syndactylisis)*. This is one of the oldest operations in surgery. The old procedure was to split the skin from one finger on the palmar surface and the other finger on the dorsal surface and then wind the resulting flap around its finger. This bettered the condition but never cured it. Likewise, in most of these cases the terminal phalanx is as one, being firmly united with its mate at its side. Normally, as the base of the web is square, there was never skin enough to make up for this space, resulting in a very incomplete condition. By far the most efficient way to treat this condition is to cut the web right down through the middle just as far as one can until the ligament is reached; this leaves a good thick skin on the palmar surface as well as the dorsal surface and leaves the denuded area between the fingers. We then place a full thickness graft on the denuded area. Later by special op-

eration, the base is squared which will insure a full deep web, allowing for complete abduction.

### DUPUYTREN'S CONTRACTURES

#### *The So-Called Dupuytren's Contracture:*

The cause of this contracture is unknown. We know that it is mostly in older men and in persons who have a tendency to lay down fibrous tissue. It is one of the most disabling conditions one can imagine, because it usually starts in the index or the little finger, and is followed by a gradual and increasing contracture until the fingers are forced down on the palm. There have been various methods devised to cure this condition, but the original discussion by Dupuytren in which he states all the palmar fascia must be removed and the whole skin must be thoroughly mobilized, still holds true. The best incision is one made along the edge of the palm on a line between the little and third finger, then carried across towards the index finger at the uppermost crease. This whole flap is thrown back and the palmar fascia completely removed. Because frequently many of these cases have been operated previously, or because the skin has become thoroughly hardened, it may be necessary to remove some of the skin. This should be replaced by a very loose fitting full thickness graft. Following this extensive removal, X-ray will help prevent the reformation of fibrous bands from tissue which may not have been completely removed. We have operated some fifteen of these cases, several of which had been previously operated, but not completely. We have obtained unusual results on those cases where we have been very radical, but when we have tried to be conservative in the removal of the fascia, we have always had recurrence.

### TRAUMATIC DEFORMITIES OF THE HAND:

#### INFECTION

*Those following deep palmar abscess.* There is probably no phase of reconstructive surgery that is so difficult and so baffling as reconstruction of tendons which have been destroyed by infection. This is because not only is the tendon destroyed, but the tendon sheath, the nerves, and all the fatty tissue is gone, and whatever little string of tendon there may be left, is imbedded in thick, hard, fibrous scar. We never attempt surgery on these hands until we are certain beyond all measure of a doubt, that every bit of infection has subsided. Before we do any



operation, we mobilize them under gas and thoroughly massage them; if they then do not break down or flare up, we allow two weeks to pass, when it is usually safe to attempt it. The procedure in these cases always depends on the amount of destruction and the extent of the involvement. One incision is usually enough, because at best the blood supply is extremely poor. We get beyond the area of destruction and follow every tendon down into the mass on both sides, and then try carefully to separate whatever is left. We make no attempt in these extensive cases to separate the superficial from the deep tendon but are satisfied if we get some reasonable amount of flexion.

When we have separated or built up our tendons, it is best to take some fat from the arm or from the abdomen and surround them. One must be very careful, as this fat has a tendency to break down. The wounds are drained and the hand dressed with sponge pressure, to leave no space for a collection of serum. The hand is left at rest for about one week, and then passive motion and massage are instituted. We are never very enthusiastic about these conditions and frankly tell patients they should be thankful for any little motion they get. If we get sufficient motion to allow the patient to dress himself we have done much, because with restoration of the prehensile factor of the hand, we have given him that one outstanding attribute which differentiates the human hand.

#### BURNS IN CHILDREN

Another serious trauma resulting in crippled hands, are those which result in contractures following deep burns. Deep burns destroying the palm of the hand in adults are comparatively rare. These are much more common in children. We have had many cases where children have had the palms of one or both hands destroyed, by gripping hot objects, with a resulting destruction of the palmar skin and some of the palmar fascia. This is the most frequent type of burned hand we encounter among children. These cases can be brilliantly restored by a simple yet technically difficult operation.

All the scar tissue is carefully resected, a careful pattern is made and a full thickness graft is cut from the abdomen and carefully sutured in place. The ends of the fingers sewn palm upward to hardware cloth and even pressure instituted. In this manner the palm is restored with

a thick pliable skin. We have had some brilliant results with cases of this type in children from six months to eight years of age. To use a pocket flap is a very difficult procedure in children, because of the difficulty in dressing, the difficulty of holding the hand in situ and trouble with infection. They simply will not keep the hand at rest, and then too, whereas the first procedure can be accomplished with ten days hospitalization for out of town patient, and one day hospitalization for in town patients, with not to exceed six dressings, with the result not nearly so satisfactory. When one knows the technical difficulty of the first procedure, and understands it, the end result is practically assured.

#### BURNS IN ADULTS

In adults the procedure with burns on the palms of the hand is much the same as in children. By using the heavy skin of the back, we can give one practically as tough a palm as before the injury. In removing the skin one must be careful not to take away the skin over the spinous process because the resulting scar is often painful. One should go  $\frac{1}{2}$ " to 1" to the side.

#### BURNS ON THE BACK OF THE HAND

We see a great many hands in which the backs have been burned, a lot of skin destroyed, healing having taken place by granulation tissue. This results in the piling up of a lot of fibrous tissue and scar, causing fixation of the hand in extension. These cases can be very successfully treated in a comparatively simple manner, by shaving off the fibrous tissue with a straight razor. The hand is then completely flexed and the area is covered with a thick split graft cut in one piece. The only difficult procedure is cutting the split graft in one piece. This can be accomplished with a large thin knife and suction apparatus. The graft is then covered with xeroform gauze and even sponge pressure applied. In a couple of weeks the dressing is removed, and in less than three weeks a half erythema dose of X-ray is given and this is repeated four or five times. In this connection I will say that I refer these cases to the very best X-ray men available in the community in which the patient lives, and write him most careful instructions never to exceed a half erythema dose and to use great caution. On one case I lost my graft due to the careless X-ray. X-ray prevents the re-

formation of fibrous tissue from the tiny islands which are left, and the consequent recurrence of some of the contractures.

When the burn has been extensive enough to destroy the fatty tissue on the back of the hand and some of the tendon sheath, an entirely different procedure must be used. In these cases we completely resect the scar and all thickened tissue and the thin skin on the upper inner portion of the thigh is used for the graft. An incision is made across the top, and the skin dissected free leaving just a little bit of the fatty layer attached. Holes are punched in the lower end of the flap to accommodate the fingers. A split graft is placed underneath the flap on the denuded thigh and the hand is sewn in situ. By placing in the split graft we cover the denuded area, preventing infection, and save two operations. The hand is allowed to remain in situ for three weeks and the flap is gradually cut away under local. When both hands are involved, this of course takes five to six weeks or more, and is costly and time consuming, but one cannot otherwise get a movable flexible skin on the back of the hand when all of the fine fatty tissue has been destroyed by the burn. This gives the nicest end result of any of the procedures, as it covers the hand with a skin that can be exposed to the weather, can be barked and skinned without it everlastingly breaking down, and neither the cold nor the sun disturbs it.

#### THE CRIPPLED HAND RESULTING FROM VIOLENCE: CUT TENDONS AND NERVES

These result from such as automobile accidents, glass injuries, etc. We will illustrate several of these cases. The most common are those resulting from being thrown into a windshield and severing the nerves and tendons in the wrist. It has been my lot to have seen a great many of these cases, both early and late. I am leaving this group till last because it is the type of case the average man sees most frequently. These are often the result of auto or bus accidents in which someone falls into a glass, throwing the hand out in extension and the glass cuts the nerves and tendons at the wrist. The hands being held in tension, the cut often goes from radius to ulna involving everything.

Do not attempt to sew this up in your

office alone. Get someone, office girl, relative, or nearest doctor to administer an anesthetic, because they cannot be correctly sewn up without complete relaxation.

If you do not know your anatomy, get down your book, put it on the table next to you, open at the page showing the tendons and nerves of the hand, and refer to it as you sew up the hand. I have found in most instances that the difficult thing for the men to differentiate is the nerve from the tendon. There are only two nerves of any consequence; the ulnar and the median. The median nerve is directly under the tendon which sticks out when one fully extends the fingers, and is known as *Palmaris Longus*. This nerve is usually cut and inasmuch as it is the nerve of sensation for most of the hand, it is very important. The upper end will not contract, but the lower end springs into the palm. The common instinct is to sew the median nerve into the palmar fascia, mistaking it for the tendon. If you are not sure, make a longitudinal incision into the nerve. You will find it pinkish and vascular. The tendon is white, hard, and has little blood supply. The ulnar nerve lies deep next to the flexor carpi ulnaris. This is much more easily found as it does not usually retract into the palm. With a book before you, (if you do not understand the relationship) the nerves can be carefully approximated, end to end, with fine number A Corticelli black silk and an ordinary straight needle. These needles can likewise be used for accurate end to end approximation of tendons. One does not need a lot of heavy stuff, because we flex the wrist when we put up the hand so there is no tension whatsoever. The main thing is to take your time; it takes hours. I wish to illustrate the following hand, which took me some four hours; namely, from one until five o'clock in the morning. This man had every tendon cut in from three to six places. He is now able to close his hands sufficiently to grip a steering wheel, open his hand and button his clothes. One must spend plenty of time, sew accurately and watch details. It requires a little technical knowledge and if you are not sure of your anatomy, just put the book before you, chase the family



out, follow the pictures, and you cannot go wrong. This same procedure should be followed in transverse cuts of the dorsal surfaces of the hands. I am not going to burden you with technical details or what to do when you see the end result of bad surgery, because one must alter the procedure to suit the individual case.

#### SIMPLE FRACTURES OF THE METACARPAL AND PHALANGEAL BONES

It is too often the practice to simply put these up on a piece of board and let them go, whereas a simple procedure will prevent most disabling deformities. There are two modes of procedure to follow, depending on the type of fracture we have to deal with.

The first is: To put the hand up by transfixing the terminal phalanx and the nail with No. 22 wire and using a banjo splint with elastic traction.

The second is. To put the hand up by curling it around a large bandage, thus maintaining constant traction.

#### COMPOUND COMMINUTED FRACTURES

We treat these fractures with a good deal of destruction of the soft tissue, such as one gets from explosions or when ground up in auto accidents, by swinging them up. Every household has a simple iron bed. There is always plenty of lumber to be obtained, and you can tie an overhead frame to any bed. Transfix the fingers with baling wire or wire from a piano and swing the hand up so the weight of the arm in flexion will cause traction. It is then easy to irrigate, clean, and to remove from day to day the little sloughing which occurs.

In conclusion, remember one can easily obtain an artificial foot, but never since history began, has anyone been able to make an adequate hand. The hand is the most complicated piece of mechanism in all the world. The flexion, extension, abduction and adduction, the thumb and finger motion, with all the little delicacies which accompany it, cannot possibly be replaced.

It then behooves us to do everything we can to save the functions of the hand, to the greatest possible extent.

## INJURIES OF THE NERVES AND TENDONS OF THE HAND\*

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CHICAGO

### I.

#### THE IMMEDIATE TREATMENT OF INJURIES OF THE HAND

The principles of the immediate treatment of injuries of the hand are not different from those of other injuries, but injuries of the hand seem to us particularly important because they are so common and because the function of the hand looms so large in the lives of every one of us.

In the treatment of an injured hand it is of first importance to have a definite and accurate knowledge as to the extent of injury. Too often one finds only after the most opportune moment for treatment has passed that important nerves, tendons or bones have been injured as a result of what was apparently a simple and uncomplicated traumatism. In few parts of the body, moreover, is it possible to determine so accurately by examination of the part, not of the wound, the exact nature and extent of the injury.

We are inclined to think of the hand as a complicated mechanism and to consider an exact diagnosis as difficult of accomplishment. It should not be so. In injuries of the volar surface of the forearm and hand the structures likely to be involved are median and ulnar nerves, and long flexor tendons. The symptoms of median nerve injury are definite and easy to elicit—anesthesia in the area of median nerve distribution, roughly the volar surface of three and one-half fingers, and loss of ability to rotate the thumb so that it faces the fingers. The symptoms of ulnar nerve injury are equally definite—anesthesia in the area of ulnar nerve distribution, the volar and dorsal surfaces of one and one-half fingers, and loss of the ability to abduct the fingers from and adduct them toward the midline of the hand. Because of the close proximity of the ulnar vessels there is invariably associated with ulnar nerve injury the severe hemorrhage that results from injury of ulnar artery or veins or both. There are, of course, other symptoms of median and ulnar nerve in-

\*From the Department of Surgery, Northwestern University Medical School. Read before the Oklahoma State Medical Association, Oklahoma City, May 16, 1933.

jury, but those mentioned are unequivocal and diagnostic.

The symptoms of division of the long flexor of the thumb and of the flexor digitorum profundus are equally definite—loss of power of flexion at the interphalangeal joint of the thumb, and at the distal interphalangeal joint of the four fingers. Division of the flexor digitorum sublimis and of the flexors of the wrist is more difficult to recognize by examination of the hand itself, but a glance at the wound is usually sufficient to tell the surgeon that some of these tendons, at least, have been injured.



Fig. 1



Fig. 1

Fig. 1. Division of extensor tendons of middle and ring fingers by fireman's axe; immediate wound closure elsewhere without tendon suture. Secondary tendon suture seven weeks after injury, with transplantation of fat under sutured tendons; primary union. (a) Findings at operation. Solid black lines indicate divided tendons. (b) Result four years after operation.

With injuries involving the dorsal surface of the hand and forearm the diagnosis is equally simple. Below the middle of the forearm the radial nerve is purely a sensory nerve; its division results in anesthesia of the dorsal surface of three and one-half fingers. Division of long or short extensor of the thumb, the extensors of the wrist, the common extensor of the four fingers, or any one of its constituent tendons is not likely to be overlooked if the surgeon simply tests the patient for ability to extend the thumb, the fingers and the wrist.

The second step in the immediate treatment of a hand injury is to determine exactly what treatment should be carried out when the patient is first seen. In reaching this decision one question is of paramount importance and deserves a consideration that it does not always receive. It is this—is the wound clean, is it contaminated, or is it already infected? To answer these questions is often diffi-

cult, but our experience has impressed several facts upon us. First, that so far as the patient is concerned the danger from infection far outweighs the possible harmful effects that may follow an injury of the soft tissues or bone, with the exception of course of a severe and life threatening hemorrhage. Secondly, that if there is a question as to the possibility of converting a contaminated wound into a clean wound, or as to whether infection has already developed it is far better to leave the wound alone, as far as any operative repair of injured tissues is concerned, than to run the risk of dissemi-

nating virulent organisms throughout the tissues. Thirdly, that in the cleansing of a contaminated wound or in the preparation of a clean wound for operation nothing is quite so valuable as plain soap and water. I hesitate to dwell on something so simple and commonplace, and yet each of us is responsible to a certain extent for the teaching of medical students and internes, and this phase of surgical teaching is often neglected as scarcely worthy of our time and attention. We live in an "antiseptic age." We are constantly bombarded with arguments and literature extolling this and that antiseptic and we are prone to forget the important lesson, demonstrated so forcibly during the World war, that if wounds are carefully cleansed before sufficient time has elapsed for bacteria to invade the tissues, and if this is done without injuring the living tissue, no antiseptics are necessary. For a long time in our own work and in our ward at the Cook County Hospital we





Fig. 2



Fig. 2

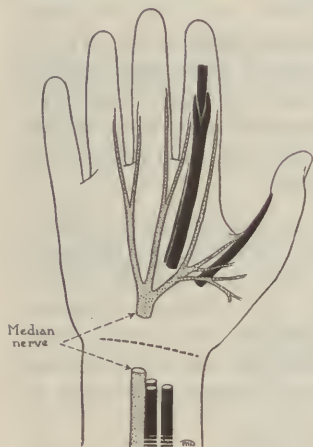


Fig. 2

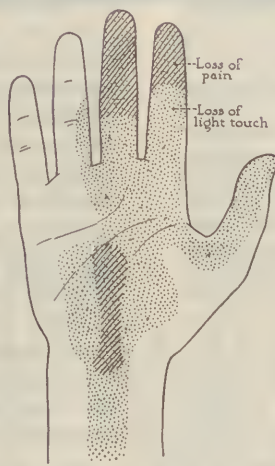


Fig. 2



Fig. 2

Fig. 2. Division of median nerve, of flexor pollicis longus and both flexors of index finger; immediate skin suture elsewhere; primary union. Secondary nerve and tendon suture twenty-six days after injury. (a) Before operation. (b) Findings at operation. Solid black lines indicate divided tendons.

(c) Result and (d), (e), sensory findings 17½ months after operation. Dotted area indicates loss of response to light touch; oblique lines loss of response to pin prick. In spite of the objective loss of response to light touch the patient states that sensation is practically normal.

have prepared compound injuries for operation by laying sterile gauze over the wound, carefully cleansing a wide area about the wound with soap and water and finally cleansing the wound itself as gently and as thoroughly as possible with soap and water. The results obtained have convinced us that if one cleanses contaminated tissues with the most efficient cleansing agent we know which does not injure delicate living tissue cells—in other words with soap and water, and does it so gently that his manipulations do not injure these delicate cells, healing with a minimum of wound reaction is more certain to result than if he floods the wound with chemical solutions which coagulate and destroy tissue and so help to form excellent culture media and favorable conditions for bacterial growth. Finally, in the repair of injured tendons and nerves no factor is so important in securing a successful result as healing of the operative wound without

infection and by primary union, and in order to secure such a result it is wiser in doubtful cases to suture the carefully cleansed wound loosely, or to leave it unsutured and postpone further operative repair until it can be performed as a perfectly clean operation, than to run the risk of having infection develop after an immediate operation and nullify completely the results of operation and, in some cases, make practically impossible any subsequent operative repair.

To be more specific, the criteria we have come to depend upon in deciding the question of immediate operation are these: the cause of the wound, the condition of the hand, the site of injury, the conditions under which the injury was sustained, the first-aid treatment rendered, the time that has elapsed, and the facilities available for repair. If the wound is due to a clean and cutting instrument, if the wounded part was clean, if the wound was



Fig. 3

Fig. 3

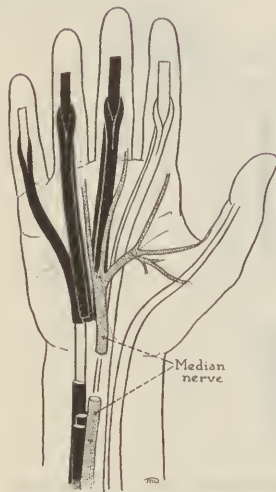


Fig. 3

Fig. 3. Division of median nerve, of both flexor tendons of middle and ring fingers, and of superficial flexor tendon of little finger. Immediate closure of skin wound; primary union. Secondary nerve and tendon suture twelve weeks later; primary union; secondary formation of a small sinus which remained unhealed until a single suture sloughed out ten weeks after operation. (a) Before operation. (b) Findings at operation. Solid black lines indicate divided tendons. (c) Result two years after operation.

sustained indoors and not on the street or open road, if the first-aid dressing was surgically clean, if the patient is seen within three hours after injury, and if hospital facilities are available for operation, we believe one is justified in carrying out an immediate repair. If these conditions are not all fulfilled we believe it is wiser to postpone the repair of nerve and tendon injuries until the wound is soundly healed and until the operation can be performed under ideal conditions.

## II.

### THE REPAIR OF NERVES AND TENDONS

In the surgical treatment of injured nerves and tendons a number of technical details are of great importance. First of these is care to eliminate the possibility of infection, for we believe no single factor is so important in securing a successful result as healing by primary union. The injured hand is carefully cleansed with warm soapy water the evening before operation. It is then covered with a sterile dressing which is not taken off until the

patient reaches the operating room. In the operating room a blood pressure cuff is applied to the arm and the hand and forearm are painted with 5 per cent picric acid in 50 per cent alcohol just before the sterile linen is applied.

The nose as well as the mouth of everyone who enters the operating room is masked for we are convinced by Meleney's studies and by our own clinical observations that wound infection can result from virulent bacteria entering the wound from the uncovered nose of surgeon, nurse or assistant.

When possible we prefer to use a general anesthetic—nitrous oxide, ethylene or ether—in the treatment of a severely injured hand so to avoid injecting fluid into tissues which have already been injured, and so as not to make the blood pressure band a source of discomfort to the patient.

Just before the incision is made the arm is held elevated for a few minutes, and the blood pressure band inflated to 240 mm. so as to secure a bloodless field. One cannot perform accurate and satisfactory nerve and tendon suture unless the field is free from blood, nor can one avoid traumatizing delicate tissues when constant and repeated sponging is necessary.

If possible the incision is made in such a way as to avoid cutting across flexion creases and so as to permit one to lay a flap of skin and subcutaneous tissue across the line of nerve and tendon suture. In other words, in cases of median and ulnar nerve injury one tries to avoid a vertical incision along the middle of the volar surface of the forearm, an incision which is difficult to suture when it is necessary to flex the hand at the wrist to avoid tension and which makes it necessary to suture skin and subcutaneous tis-



sue directly over the line of nerve and tendon suture.

In dissecting free the injured nerves and tendons it is wise to work toward the site of injury from normal tissue above and below the wound, for one soon becomes hopelessly lost if he tries by direct attack to identify important anatomical structures which are bound together in a mass of fibrous tissue. When the injured nerves have been identified and freed the tendons are taken in turn. Every effort is made to perform a sharp, clean cut dissection, to avoid tearing of tissues and traumatism with forceps and blunt instruments. If traction on them is necessary nerves and tendons are held with moist gauze sponges rather than with sharply pointed tissue forceps; when they are freed and identified they are protected with gauze or cotton soaked in warm salt solution until the dissection is completed.

large dressing of sterile gauze and bandaged under moderate pressure; only when the bandage has been applied is the constriction released and the blood allowed to flow back into forearm and hand.

A light aluminum splint is applied to hold the hand and forearm in the desired position. For example with injuries involving the volar surface of the hand and forearm it is absolutely necessary to apply a splint which maintains volar flexion at the wrist, so as to eliminate any tension on sutured nerves and tendons. The splint is gradually straightened and usually dispensed with at the end of three weeks.

Two or three days after operation gentle movement of the fingers is begun, and increased as rapidly as it is possible to do so without endangering the healing wound or causing undue pain. Skillful physical therapy and well directed exer-

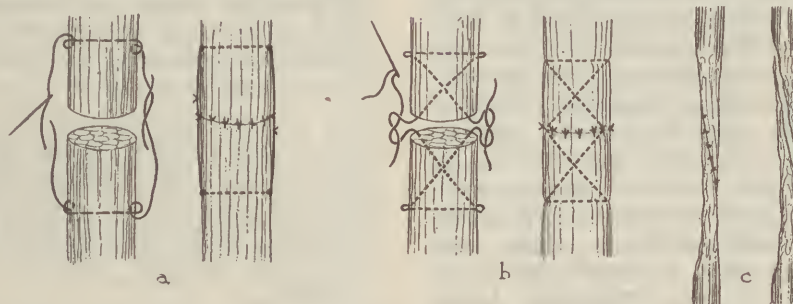


Fig. 4

Fig. 4. Method of approximating the ends of divided tendons. (a) The preferred method. (b) An alternative method. (c) Method of approximating the fragmented ends of scarred tendons when end-to-end union of freshened tendon ends is impossible because of extensive destruction of tissue.

If there is a question as to injury of blood vessels it is wise when dissection of the nerves and tendons is completed to release the constriction and ligate any vessels that may be bleeding. The arm is then elevated again and the constriction reapplied to check the persistent oozing that can be stopped only by constriction or by pressure.

Tendons are sutured first, and if possible end-to-end (Fig. 4). The nerves are then sutured end-to-end with the very finest of silk suture material, that includes only the epineurium. Finally the subcutaneous tissues are united with fine black silk and the skin with fine needles and fine suture material, that do not leave holes in the skin through which bacteria can enter the deeper tissues.

The sutured wound is covered with a

cises, carried out for a number of weeks after operation, are of very great value in bringing about restoration of function.

Note: A somewhat more extended discussion of the subject with a list of important references on the treatment of nerve and tendon injuries can be found in *Surgery, Gynecology and Obstetrics*, January, 1933, volume LVI, pages 1-39.

DISCUSSION: *Dr. A. L. Blesh*, Oklahoma City.

I feel totally inadequate to discuss these papers. They were on a specialty of surgery that my experience does not so completely cover as that of the authors of the papers. I have been interested, however, in those phases of the subject which have to do with tendons and nerves. Naturally we have all of us had more or less experience with this, and speaking relatively to the time of resuming function, I

think this is governed largely by the length of the nerve and the distance the regeneration has to travel. Regeneration will not begin in any distal segment of a nerve, however, no matter whether it was sutured primarily or secondarily until the degeneration is complete, and then again, too, there is a difference in the recuperative or regenerative powers, to put it that way, in different individuals and therefore the personal factor enters in. While it is true that regeneration does not begin until the generation has completed itself, both of these processes will occur more rapidly in some individuals than they will in others and I don't think any positive prediction can be made as to the length of time it will take. The fitting of the pattern of the nerve is always a matter of considerable disputation. I do not think we can ever exactly coaptate the nerve upon the original pattern but there is a selective action in the regeneration of the nerve itself that comes to aid in that matter. One of the papers stressed the fact, and very properly so, that immediate repair is the most important thing if it can be done. Also it stresses another factor that I am in hearty accord with, to keep out of these injuries strong antiseptics. I have seen more harm arise from iodine and mercurochrome than just simple remedies such as sterile water or something that is not irritating. I am sure that most of the advocates of antiseptics in general agree that strong antiseptics applied in these wounds have done more harm than good. The primary repair can be done. We can risk the infection in suturing the wound because if it does not heal we still have just as good an opportunity in six months as we had in the beginning and we have given the patient the opportunity to heal in the beginning, therefore I believe the remarks about primary repair are pertinent. I think that Dr. Koch's paper is classic. I think all that comes from the clinic is classic, and I wouldn't presume to discuss this paper except to say that I enjoyed it tremendously.

*Dr. Koch:*

I enjoyed very much Dr. von Wedel's paper and I want to congratulate him on the admirable results he has obtained in the treatment of burns, and of raw surfaces with full thickness grafts. In my judgment his treatment of these conditions is absolutely correct.

I do want to take exception to one thing

he said. He gave you some bad advice when he told you to "pitch the family out, get out your 'anatomy'" and then suture the divided nerves and tendons of the patient who had sustained a recent injury of the hand or forearm. The man who has to study his textbook of anatomy as he tries to suture divided nerves and tendons should not attempt such surgery. I say this simply because one sees so many disastrous results with prolonged infection, extensive sloughing of tendons, and frequently complete loss of function after such attempts. Dr. Kanavel often said to us, "I would rather have a man who is doing general surgery take out my appendix than suture a divided flexor tendon."

First of all there are few operations more difficult than the accurate suture of divided nerves and tendons; in the second place no single factor is so important in securing a satisfactory result as healing by primary union and without infection. Unless one has adequate facilities and skillful assistance it is quite impossible to secure such a result.

I enjoyed Dr. Salsbury's paper very much and heartily agree with him. His idea of suturing superficial wounds accurately and of not using drains is sound surgery. I am glad he had one case that got well without the use of mercurochrome.

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ORCHITIS DUE TO MUMPS WITHOUT INVOLVEMENT OF PAROTID GLANDS

Walter D. Bieberbach and Foster Vibber, Worcester, Mass., (Journal A. M. A., April 8, 1933), add one more case to the records of orchitis due to mumps without involvement of the parotid or other salivary glands. They feel certain as to the diagnosis in eliminating the various causes of orchitis in their case. Syphilis was ruled out by the history and by the Wassermann test. Tuberculosis was strongly considered because of the family tendency; this was ruled out by the absence of involvement of the epididymis following recovery from the acute symptoms, by the urologic check-up and by negative examinations of the lungs and roentgenograms. Typhoid and septicemia were eliminated by blood studies. The important question of gonorrhea and its sequels was thoroughly eliminated by clinical and laboratory examinations. Mumps was the final diagnosis for the following reasons; the fact that the patient had never suffered from the disease but had recently been exposed to the disease by his daughter; the sequence of involvement of first one testis and then the other; the duration of the illness with swelling and enlargement of the testis proper, and finally the relative lymphocytosis, which closely conforms to the previously reported cases of mumps in which the testes are involved without apparent changes in the parotid or salivary glands.



## ACUTE APPENDICITIS—A PROBLEM

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Acute appendicitis is a curable disease. If the proper remedy is applied before the inflammation spreads beyond the appendix, the cures should amount to 100%. There are in round numbers 25,000 deaths in this country from this disease annually. Moreover the death rate seems to be on the increase.

The question of proper treatment was settled about twenty years ago. In the interim the discussions have waged around the question of the proper treatment of cases of ruptured appendix. In this there is no unanimity of opinion. We have only to listen to a group of surgeons express themselves, and there will be about as many opinions as to the proper handling of cases of peritonitis from ruptured appendix as there are surgeons who talk. This was amply verified in the surgical section of the recent meeting of the American Medical Association at New Orleans. These discussions will, and should be kept alive, for the deaths in appendicitis are to be found among those who are not treated properly before rupture takes place. Strive as earnestly as we may, no one would be foolish enough to say that we will eventually attain the ideal order when no one will be permitted to suffer from the rupture of an acutely diseased appendix.

In this paper the treatment of peritonitis from ruptured appendix will not be discussed. The problem which concerns us is; how to reach the patient and to remove the appendix before rupture takes place. We assume that the members of the medical profession are unanimous as regards the surgical removal of the acutely inflamed appendix as being the only safe and proper treatment. Is this a correct assumption? In the published list of deaths of physicians in 1931, appearing in the Journal of the American Medical Association, between forty and fifty were attributed to acute appendicitis! It is understood that these figures do not include all doctors who lost their lives from the same cause.

Several questions arise as to the reason for such a mortality among those who are supposed to be informed. Two of these, at least, are pertinent; first, are physi-

cians sufficiently sold on surgery as the proper treatment of acute appendicitis that they will accept timely operations on themselves? Observation convinces me that with rare exception they are. Second, are doctors sufficiently informed and alert that they are aroused to the possibility of the cause when the initial symptom of abdominal distress is experienced? From personal experience, and from observation, the answer to the second question is too often, "no." Even the author of a book on appendicitis stated that, while on his way from his home to New York, where he was going to make final arrangements for the publication of his work, he had an attack of acute indigestion. He left the train enroute, called a surgeon friend who diagnosed acute appendicitis, took him to the hospital and proceeded to remove a gangrenous appendix. The author further stated that he afterwards recalled that he had previously had similar but milder attacks of indigestion. The inference was that he had not suspected appendicitis as the cause of these attacks.

It is not satisfying to say that the doctor who diagnoses his own illness and prescribes for himself, uses very poor judgment. What does the average doctor offer in explanation of the high mortality in acute appendicitis? He blames it all on the patient for doing this or not doing that. May we ask—how is the patient to know what his trouble is when he first has bellyache and perhaps feels nauseated? Has he been instructed as to the possibilities of these signs? The signs and symptoms of acute appendicitis are so classical and nearly constant, that we are prone to assume that all should understand them. So are the signs and symptoms of cancer of the stomach constant as described in the average text book, but what does it avail us when we are able to demonstrate them in any given case? We all know that when all the clinical and laboratory signs of stomach cancer are present, our chief efforts need only to be directed toward making the patient as comfortable as possible, and winning the good will of relatives to the end that an autopsy may be obtained in which to prove the brilliant accuracy of our conclusions.

The comparison of cancer of the stomach and acute appendicitis may appear to be "far fetched" to some. Let us see. Read in any text book, if you please, a description of the symptomatology, signs, and laboratory findings of cancer of the

stomach, and you will have a picture of a condition which is no longer limited to the stomach. Acute appendicitis, we are told, first manifests itself as pain in the abdomen. This is the first, and is a constant, symptom. What is the condition of the appendix when pain in the belly is the only sign? The next symptom is nausea, and is present in a majority of cases. What is the condition of the appendix when these two symptoms, only, are present? Is not the inflammatory process under way? The third symptom of the classical picture is fever or other signs of toxemia. With these three signs present are we prepared to establish a working diagnosis? No, we must look for the fourth sign of localized tenderness, and perhaps rigidity, before the classical picture is complete. This last sign always means that there is at least an irritation of structures outside the appendix, usually the parietal peritoneum. If one will expose the appendix under a local anesthesia of the abdominal wall, he will find that the appendix itself may be treated with impunity, and even removed, without the patient experiencing any pain. But if traction is made on the meso-appendix, there will be pain in the epigastrium and perhaps nausea. The same symptoms will be present if the meso-appendix is not anesthetized before ligation.

The final symptom in the chain of symptoms means that the inflammation is threatening to break the bounds of the appendix if indeed it has not already done so. Nearly any surgeon of considerable experience can recall cases in which the fourth sign or symptom was not present—no localization, and yet on operation the appendix was found to be already ruptured. The explanation is that the appendix was so located that the product of inflammation had not reached the parietal peritoneum. Even necrosis may go on to liquefaction while we wait for localization, and we are stunned with the signs of generalized peritonitis instead. Fortunately such cases are relatively rare.

The point which we desire to emphasize is that with the first signs of bellyache there is already an inflammation in the appendix, and when anyone whose appendix has not been removed has bellyache, he should suspect that he has a diseased appendix until proof to the contrary is established. If the bellyache is accompanied or followed by nausea, and the signs of toxemia follow closely in their

wake, preparation for surgical treatment should be gotten under way, and by the time these preparations are completed the localizing symptoms will usually be found well established. If localization does not take place while the signs of toxemia increase, operation should not be delayed.

These statements may seem radical and not in keeping with safe procedure, but unless physicians become more alert and anticipate the tragic possibilities of every case of acute appendicitis, how are we to materially reduce the mortality of this dreadful disease? We, who acclaim ourselves the guardians of the health and lives of the people, need to be re-baptized in the faith—to use the language of the camp-meeting exhorter. Some of us even need to be rejuvenated in the matter of our responsibility to the public. Having renewed our interest in the question of acute appendicitis we should go to those who look to us for council and advice, and instruct them concerning those signs and symptoms which often develop with frightful rapidity, which, if not heeded, may lead with tragic swiftness to an untimely and unnecessary death. For several years I have followed a method which to some may not seem to be in good taste. Before discharging a patient who has had appendicitis, he has been asked to go over his symptoms in order of their development. He has been impressed with the fact that he had the usual classical signs—the signs as they nearly always develop—and he is told that he should instruct his people and neighbors in these signs and symptoms to the end that the family physician may be called early following the onset of these symptoms. If the family physician does not give this instruction, who then is to do it?

Public health departments rightfully confine their efforts to the control and eradication of contagious diseases, and those things which affect the welfare and health of the community as a whole. Obviously appendicitis, like cancer, is, and always will be, a matter for individual and not mass consideration. Organization for the control of these must, therefore, be outside the function of the state department as long as we maintain our present conception of the proper function of the departments of public health. We have the society for the control of cancer—a disease which so far as our present knowledge goes, will continue to carry a high mortality. If every person of every age



should have at least a yearly examination, there is no doubt but that the mortality from cancer would be reduced, but we all know that cancer develops in certain regions in which the symptoms remain silent until after the malady is well advanced, hence, is incurable. On the other hand, let us assume that every person has been instructed in the early signs of acute appendicitis, and in case of an attack would conform to the proper method of treatment; what, let us ask, would be the result? The answer is "practically no mortality." For every four deaths from cancer there is at least one from acute appendicitis, and for more than fifteen years no improvement has been made, and nothing particular has been done to try to bring about an improvement in these results. True, at least one large insurance company, and certain commercial houses, have passed out constructive suggestions in their paid advertisements. We of the profession should feel ashamed that we have slept on our rights in leaving this instruction in the hands of those whose interests are commercial rather than human.

This tirade would not be complete if we did not pay our respects to certain surgeons who, by their method of treatment, render operations for acute appendicitis unpopular. The craze to explore the abdomen is still rampant in some quarters, hence the outer rectus and mid-line incisions are employed. These incisions call for an unnecessarily prolonged convalescence, and provide an unholy temptation to do meddlesome tricks. For example: in August a surgeon reports that he operated on a young woman for ruptured, gangrenous appendix. At the same time he removed an ovary and tube. Two months later she is still confined to her room from what the neighbors understood was an operation for acute appendicitis. Would one of those neighbors graciously and promptly accept surgical treatment in case of an attack?

Properly treated before rupture a patient having acute appendicitis need not be confined to the bed more than a very few days. To this statement there are rare exceptions. By treatment is meant an incision of sufficient length at the place that permits easy and safe removal of the appendix with least trauma to other structures. The appendix has its origin near the end of the cecum. The cecum and ascending colon are usually the most lateral structures in the right side of the peri-

toneal cavity. An incision outside the right linea semilunares, except in anomalous conditions, will expose the cecum or ascending colon. Properly made such an approach will not destroy muscle support nor sever a spinal nerve. It can be made high or low to correspond to the level of the appendix. There being two muscles, the fibers of each directed practically at right angles to the other, the integrity of the abdominal wall is not disturbed.

In operating for acute appendicitis the surgeon cannot always anticipate whether he will need to make use of a drain. To have to place a drain in the rectus is to increase the probability of at least two dangerous post-operative complications. These are: post-operative hemorrhage from an eroded vessel, and, phlebitis. In the days when operation was rarely done except for abscess, secondary hemorrhages were common, and many of them were fatal. In those days the so-called McBurney incision was usually placed half way between the spine of the ilium and umbilicus. Such an incision was in the rectus muscle, and was not the McBurney muscle splitting incision. Only just recently I was asked to see, and subsequently operated on, a patient who, a few months previously had had an appendiceal abscess drained. When I first saw the patient's abdomen, only the facts as stated above were known to me. Noting that the scar was over the rectus I remarked to the internes that such an incision for drainage of an abscess was bad, but in this instance probably could not be placed outside of the linea semilunares. The completed history revealed that this patient suffered from post-operative phlebitis, and had become a drug addict as a result of prolonged illness and suffering. A mid-line incision revealed the remains of the appendix located in a mass of adhesions near the mid-line of the abdomen.

The operation for the removal of the appendix is usually very easy. Just occasionally the operation will tax the skill and resources of the most capable surgeon. But since most often it is a simple, easy operation when performed with a small McBurney incision, and entails a morbidity of such short duration, why should surgeons add to the patient's trouble by any other procedure? If all surgeons would consider these things, the operation for appendicitis would not carry with it this

fear and dread that it now does with a large number of people.

Summarizing let it be said: 1. In this country there are about twenty-five thousand lives lost annually from acute appendicitis, and for fifteen or twenty years no progress has been made, and apparently no worthwhile efforts have been put forth to improve this record.

2. Diagnosed and properly treated before complications set in, the mortality should be practically nil.

3. It is evident that the medical profession is not alert, nor deeply concerned as to the real cause of this unjustifiable loss of life, but lulls itself into peaceful acquiescence by laying the blame for the unhappy outcome on the patient who fails to do the proper thing before complications set in.

4. The symptom syndrome of acute appendicitis is the progressive manifestation of an inflammatory process from its beginning and all the way through a course which often ends in perforation or necrosis before the syndrome is complete. Bellyache, usually accompanied by nausea, and with any of the signs of toxemia, should be warning sufficient to justify action in making ready for the proper treatment of an acutely inflamed appendix.

5. Education of the public in these early signs, and in the dangers of neglected acute appendicitis, offers the only hope in improving the mortality rate. It is the duty of the doctor to instruct all those who look to him for council and advice, but unless the doctor himself is re-informed and re-awakened, he is not in a position to properly perform this task.

6. Exploratory operations in acute appendicitis are unjustifiable except the exploration is made in search of a structure, the relative position of which cannot be previously determined. Such explorations too often result in increased morbidity, and this becomes a factor which often causes the patient to hesitate to accept timely operation. In a large majority of cases the operation for the removal of the appendix is very simple and easily performed, and results in a relatively short period of morbidity, if the McBurney incision is utilized.

DISCUSSION: *Dr. G. N. Bilby*, Oklahoma City.

Gentlemen, as important as this paper is, every general practitioner in the state

should have been present. It is more important to the general practitioner than to the surgeon because there is not a single surgeon who has performed half a dozen operations for appendicitis but knows the folly of waiting and procrastination. The quicker you can operate the better. I would rather operate before they become tender and localize or just about the time that begins to come on; you have a better chance than even waiting one hour or two hours. Too many of the doctors are not giving this enough consideration. Either they are not diagnosing it or else they hesitate about turning their patients over to the surgeon. I believe there are very few doctors today but what are qualified to make a diagnosis of appendicitis and make it early. It is true we are still finding a few that diagnose indigestion and give castor oil or C.C. pills to the detriment of their patients but that is very rare. Too many of the general practitioners hold that patient hoping he will get over this one attack and not have to be turned over to the surgeon. I don't know why they are doing this; if they lose the patient they will lose the family and no surgeon is going to steal a family from the general practitioner that sends the patient to him for operation. The death rate is larger with the surgeon than with the general practitioner who does his own surgery. There is no question but the man doing surgery has better technique and more skill, but the very fact that the general practitioner who does his own operating is operating his own patients keeps the death rate down. He sees them first and immediately takes them to the operating room and doesn't wait and his mortality is being held down. He may not be as skilled in his technique but he gets them early. The patient sometimes has been given salts and C. C. pills before being sent into the surgeon and in these the death rate is always heavy.

The pain does not always settle down in the right side. It may come in the left side. It often comes in the left side in one of those long appendices that lie across and at operation you find you have been misled because of the pain and tenderness in the left side. There is another factor that enters into our death rate, more so than many of you fellows think, and that is the osteopaths and chiropractors' mistreatment. Some of your surgeons got the blame for one in Oklahoma City, one of the brightest little boys that comes around the Capitol. He used to come through the



offices selling magazines, as bright and spry as could be. He was taken with acute appendicitis and his mother called a chiropractor who treated him for three or four days and when it was too late some of you surgeons did the operating and made out the death certificate for that boy, when if it had been done the first day he would be back with us in the Capitol. That death was due to the mistreatment of a chiropractor, and we have got to teach the people to stay away from these fellows with acute appendicitis. It is true that the health department is supposed to look after sanitation and also preventive medicine, but anything that will save human life comes in our sphere of work as long as we do not treat cases. We have a right and as long as I am in charge of the health department; it is a teaching institution. It teaches the people the importance of sanitation, the importance of having their children immunized, and also the importance of early operation in appendicitis, and as long as I am in charge of the health department that information is going out to the people through bulletins, magazines, and in every way possible.

Furthermore, as to symptoms, if they have that bellyache, that nausea and vomiting, tell them to go to a surgeon at once. Don't wait to see if it is going to settle down and become tender. Tell them to go at once. Two years ago I was making these farm women camps and talking about acute appendicitis. At one camp two counties of women were assembled. My first talk was on immunization and sanitation and then we adjourned for an hour or so. In my talk I had spoken of appendicitis and the main symptoms, and during adjournment one of the women came to me and told me she had that day attended the funeral of one of the most splendid farmers in the community. He became sick one morning and the doctor was called and said he had appendicitis. He came back in forty-eight hours; more than forty-eight hours after this man became sick he was taken to the hospital for operation and it was too late. When the women assembled again I went back over appendicitis and the importance of early operation. I am intending to do that again in the camps this summer and every other time I have a chance so whenever they have a bellyache they will start for the hospital. In fact, I know places where they do that now. They don't wait. As soon as they have a bellyache and vomiting they start for the hospital.

*Dr. L. C. Vance, Ponca City.*

Dr. Reed and Dr. Long and some of the other fellows here, when I was in the hospital they taught me a lot about acute appendicitis and I have seen a lot of it since. I see it every day. Last year in the meeting of the American College of Surgeons, Dr. Watson of Philadelphia, in a symposium on acute appendicitis, showed that we had more deaths from acute appendicitis than any other nation in the world. Why is it? My idea is this, that we American people go to the drug stores and the druggists prescribe. Dr. Reed almost touched on that. The druggist prescribes for the patient, gives him a purgative or gives him this and that, and when the doctor or chiropractor or whoever sees him first gets there he has a ruptured appendix. I want to congratulate Dr. Reed, which he doesn't need, on his paper. I want to say that in the education for the earliest symptoms of appendicitis, let us educate about the pain in the epigastrium. After it gets down in the right rectus anybody can diagnose it then, a nurse or the neighbor or anyone else. Often in a gangrenous or ruptured appendix the blood count may not mean anything. If we would get down to that and get away from the drug store we could get away from our mortality and we wouldn't have the highest death rate of any civilized nation in the world.

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*Dr LeRoy Long, Oklahoma City.*

Dr. Reed presents a typical picture of acute appendicitis in the paper you have heard. You know, and the people ought to know, that in a certain period of life, that is, before fifty years of age, pain in the abdomen most of the time means appendicitis. We must not forget other pathological conditions, of course. These problems are problems for the physician or surgeon to solve, but the point is that in the majority of cases in which there is acute pain in the abdomen before forty-five or fifty years of age, it means inflammation of the appendix because that is the cause of it most often. In the early development of appendicitis, as has already been indicated, the pain is over the abdomen and most often the typical place is about the epigastrium and we can understand that on account of the distribution of the nerve system in the abdomen. Irritation of the appendix before there is peritoneal irritation causes transmission

of the pain. Some years ago I read a very interesting book by Holmes, it must be twenty-five years or so, and in this book he had a little diagram. Up here was a large area representing the solar plexus and down there was an area over the appendix and that connects with the division of the solar ganglion. In the beginning of the average typical case the pain is first here about the solar plexus. It may continue down in this way so that it is over the abdomen. Later when there is peritoneal irritation the pain is down over the right side. One other thing we must consider is the obscure case and once in a while we see these cases that require a great deal of study to come to an intelligent decision. We must remember that there are two types anatomically or pathologically of appendicitis; one is when the wall is inflamed and it began as an inflammatory process in the wall. The other type is when there is thrombosis of the vessels due to erosion by a fecalith usually, some foreign body of some character, and after the acute pain as a result of the thrombus is over then you may not have any rigidity down over the right side. You may not have it until the appendix is broken down in early peritonitis.

Right here in this Hotel Skirvin I saw a young man who was a traveling man. I was asked by one of his friends to see him and I came down to see him that night. When I came down to see him he was lying in bed. He said he had some pain in the abdomen. He had a good pulse, the temperature was normal, and he had no rigidity over the abdomen at all. He had no physical signs that I could make out. I looked at him and couldn't figure the thing out very well, and I said, "I suppose I had better come by and see you in the morning." His friend, a very taciturn fellow was sitting there and he hadn't said a word until then, but he said, "that fellow is not telling you the truth. He has had a hell of a lot of pain." Then I became more interested in him. This man had minimized his symptoms, probably intentionally. He was an industrious, aggressive young man and wanted to continue his work. I had him taken over to the hospital and had an internist to come in and see him. We had the laboratory work done and the blood count was 26,000 with a high poly count, I think it was 92 per cent. The blood count helps out sometimes and here it helped out a good deal. It is not every time it helps but

sometimes it does, just like counting a pulse or a temperature. This man had a high total white count and a high poly count and had a negative abdomen physically, so I thought he must have something somewhere else. I had studied appendicitis a good deal but I wasn't able to say that there was anything wrong with that abdomen. I went back over the history and he said he had pain and nausea that morning coming down from St. Louis. I finally came to the conclusion that I couldn't find an explanation anywhere else and the operation was done and he had a gangrenous appendix. Now those are very obscure cases sometimes and demand consideration. That brings up one of the most important points and that is, find out as nearly as possible how the trouble about which the patient complains developed and know how the different diseases in the body do develop, then it gives you a good foundation for the investigation of the situation.

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*Dr. Reed:*

I wish to thank you gentlemen for your discussion. I would just like to ask this—why are so many doctors dying from appendicitis? You see it nearly every week; nearly every week you read about it in the Journal as you look in the list of deaths there. Why are they dying from appendicitis? I know a doctor should not be his own doctor, but I am afraid some of them are not getting the proper treatment at the proper time. In answer to Dr. Vance's observation, I would say to him, instruct the people. It is true we have a drug store on nearly every corner and you can get anything you want there, but I have found that a high class druggist will advise these people to see a doctor. Dr. Bilby is doing a wonderful work. It amounts to something and he is getting some fine results. The deaths in a great majority have been in those who have an absolutely typical clinical picture. We do have unusual cases. We have the retrocecal type; they are the safer type. A retrocecal appendix will rarely produce generalized peritonitis because it is retrocecal; it is hemmed in and if it ruptures you seldom have a general peritonitis. It is the typical case, the average case in which we lose our lives. The general practitioner if he can do any surgery had better operate just about as promptly as he can or else get his patient in the hands of a surgeon without delay.



# THE JOURNAL

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### EDITORIAL

#### COUNTY MEDICAL SOCIETY WORK

By the time this comes off the press, it is hoped that pleasant Fall weather will be the order of the day in Oklahoma. At any rate from the middle to late September is a good time for all medical societies to meet, and formulate their work for the months, September to May, 1934. In this connection it should not be forgotten that the State Medical Association is empowered to provide speakers, essayists and clinicians for any society, where it is deemed a reasonable number of men may be congregated as an audience. Too, it should not be forgotten that Oklahoma has a vast amount of unusual talent along this

line. It should be used; utilized in every respect, for it is only by constant iteration and reiteration are many of the well known rules, facts and laws of medicine made apparent and usable to the man who does not have the advantage to be thrown in contact with such work in his everyday occupation.

Officers of the county medical societies, throughout the state should make it a point to meet with these facts in view.

#### DOCTOR LEWIS J. MOORMAN—A BIOGRAPHY

Born on a farm one mile west of Leitchfield, Kentucky, February 9, 1875. Son of Lemuel and Martha Elizabeth Moorman. He was the youngest of seven children. The family moved to Leitchfield when Lewis was but a lad.

He attended grade school in Leitchfield and received his higher training at Bethel College. He received a B. S. degree from Georgetown College, Georgetown, Kentucky, 1898; M. D., University of Louisville, 1901.

Began practice at Jet, Oklahoma, 1901. Postgraduate work, New York Polyclinic Hospital, 1903. Married Mary Davis Christian of Lynchburg, Virginia, 1909. Post graduate work, University of Vienna, 1909.

Founded the College Sanatorium, 1914; Farm Sanatorium, 1923. Professor of Clinical Medicine, University of Oklahoma since 1926. Dean of the School of Medicine since 1931.

Member of: American Medical Association, Southern Medical Association of which he was President 1931-1932, American College of Physicians, Oklahoma State and County Medical Association, Oklahoma City Academy of Medicine, Oklahoma State Public Health Association, National Tuberculosis Association, American Sanatorium Association, American Climatological and Clinical Association.

#### DOCTORS AND POLITICS

The medical profession should be vitally interested in the administration of our government. Laws are made which are adverse to the welfare of the people of the state, and not in accordance with the best judgment of medical science. Men are

elected to office who are against the administration of new discoveries for the protection of the people. These men are not even versed in the common laws of sanitation, and seem to lose sight of even the most aged customs for the care of the sick. The medical profession stands idly by while law-makers are elected who are adverse to even a suggestion for the protection of the people and the medical profession.

The daily papers have been carrying a notice of certain changes to be made at the University Hospital. The Oklahoma State Medical Association, so far, has not been given a cordial consideration as to who they think might be of benefit in the institution in which we are vitally interested. I shall from month to month, try to awaken in the hearts and minds of the medical profession, their importance in the community, not only as one to relieve suffering humanity; but a dormant force in the political life which should stride forth and claim their place. At least each county medical society should have a legislative committee. This committee should investigate all proposed politicians in the county who will seek public office, making sure of their favorable consideration of the people as directed by the medical profession. Let us stop adverse laws and officials in the beginning, rather than try to destroy them after they are in power.

—Louis H. Ritzhaupt, M.D.

State Senator, Guthrie.

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### YOUR MOUTH—KEEP IT CLOSED

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Chapter 79, Article 8, Section 8813, Oklahoma Statutes, clearly defines "Professional Conduct."

Among these are: "The wilful betrayal of a professional secret, to the detriment of a patient."

It will be observed that the above indicates that a doctor may tread upon very dangerous ground in:

1. His statement may lay him liable to prosecution for criminal slander.

2. It may not only do the above, but by reason of this legal clause, it may deprive him of his right to practice medicine. A very serious matter indeed. The physician and nurse, like a priest, receiving a confi-

dence, acquired through information due to their peculiar relation, may not disclose such information in any guise or form. The law rightly demands, that information acquired by reason of the relation existing between physician and patient that the physician must hold such information as sacred and inviolable.

Not even a Court may force a physician to testify to information given by reason of this trust placed in him by his patient, and the physician may only disclose information so acquired by the patient's assent alone. Of course the physician may testify to matters that any ordinary person may testify to, but he cannot testify that he treated the patient for syphilis, gonorrhea, etc., because it humiliates the patient in question.

The above is written purposely by reason of the fact that certain small, thoughtless (often malicious) physicians are too prone to talk about their ex-patients. It should also be remembered that he may not say one word which would be detrimental or humiliating to the patient in the case.

The writer cannot conceive of anything so "scrubby" and unprofessional as a medical man standing on the street corner of his little gossip village and almost shouting from the housetops information he has acquired from a particular patient.

For these reasons above noted a physician should watch his step in order to avoid possible trouble. Even if his statement is absolutely true he has no right to make it if it injures the patient in question. The best thing to do is to keep one's mouth closed and the tighter the better.

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THE INTERNATIONAL ASSEMBLY of the Inter-State Postgraduate Medical Association of North America will be held in the public auditorium, Cleveland, Ohio, October 16-20, 1933. Many distinguished teachers and clinicians will appear on the program. A major list of the names of the contributors to the program, with de uoipuuuouju lœpœpœars on page XXI of this Journal. All members of The Oklahoma State Medical Association are cordially invited to attend. Registration fee of \$5.00 admits all members of the profession in good standing.



**Editorial Notes—Personal and General**

DR. W. P. FITE, Muskogee, spent the month of August vacationing in Minnesota.

DR. H. A. ANGUS AND FAMILY, Lawton, have returned from a three weeks sojourn in Chicago.

DR. W. S. IVY, Duncan, who was injured in an automobile accident near McLean, Texas, is reported improving.

DR. E. P. HATHAWAY has resumed his practice in Lawton, after a month's service at Fort Sill in the C. C. C. work.

DR. AND MRS. JOSEPH ANTONY, Lawton, spent their vacation at the Chicago Fair and a tour of the Eastern states.

DR. AND MRS. R. M. HOWARD, Oklahoma City, left the early part of August for Europe, where they will spend six weeks in Switzerland.

DR. AND MRS. E. BRENT MITCHELL, Lawton, recently returned from a visit to the east, spending several days at the Century of Progress Fair enroute.

DR. C. A. THOMPSON, Muskogee, will attend the Annual Conference of Secretaries of the American Medical Association, which meets in Chicago, September 22nd and 23rd.

DR. J. P. GIBSON, assistant physician at the Kiowa Indian Hospital, Lawton, has resigned, effective September 1st, to accept a position in the Christian College, Abilene, Texas.

DR. AND MRS. C. R. SILVERTHORNE, and Dr. and Mrs. C. E. Williams, Woodward, have returned from Denver, where Drs. Silverthorne and Williams attended an Eye, Ear, Nose and Throat Clinic.

WOODS-ALFALFA COUNTY MEDICAL SOCIETIES held their July meeting at Winchester Lake on the Salt Fork, July 25th. Fishing was the order of the afternoon, with a picnic dinner at 6:00 P. M., after which papers by Drs. Frank H. McGregor, Mangum; and T. D. Benjergdes, Beaver, on "Goiter" were heard.

**DOCTOR R. H. HANNAH**

Dr. R. H. Hannah, pioneer physician and surgeon of Lincoln County, died at his home in Prague, July 17th, of a heart attack. He was 75 years of age.

He was born in Franklin County, Kansas, 1858. He graduated from the University of Pennsylvania in 1881; he graduated from the Medical College of Memphis, Tenn., in 1886, and in 1906 completed his training at the St. Louis University of Medicine.

Dr. Hannah is survived by his wife and two sons.

**DOCTOR PAUL SANGER**

Dr. Paul Sanger, 59 year old pioneer physician of Drumright, died July 25th, following a heart attack.

Dr. Sanger was born at Fort Smith, Ark., August 25, 1874. He moved with his family to Oklahoma at an early age. He was educated and graduated at the McIntyre Institute of Tennessee, training school for Vanderbilt University, in 1894. He lived and practiced at Yukon for several years.

Dr. Sanger was a former President of the Creek County Medical Society.

He is survived by his wife, two daughters, a son, two brothers and two sisters.

**HYPOPROTEINEMIA**

According to Eli Moschcowitz, New York (Journal A. M. A., April 8, 1933), hypoproteinemia is common to many disorders and may result from loss of protein, deficient formation or destruction of plasma protein and insufficient intake of protein. Protein may be lost by way of the kidneys (nephrotic type), by diarrheas of the alimentary tract, in anasarca and by loss of blood. Hypoproteinemia due to deficient formation or increased destruction of plasma protein is one of the essential features of pernicious anemia. Hypoproteinemia resulting from insufficient intake or protein arise in the conditions previously known as war edema, famine edema, hunger edema, prison edema and the edema associated with cachexia. Hypoproteinemia produces the syndrome that has heretofore been classified under the heading "nephrosis"; namely, edema, inversion of the albumin-globulin ratio, lipemia, and usually a lowered basal metabolism. The term "nephrosis" should be relegated to those forms of hypoproteinemia that are exclusively renal in origin. "Nephrosis" cannot be classified as a disease because it has multiform backgrounds in morbid anatomy. The fundamental cause of the edema is the hypoproteinemia, and the mechanism is that suggested by Epstein: a reduction in the osmotic pressure of the serum protein. This has been conclusively shown both clinically and experimentally. The appearance and intensity of the edema parallels the reduction of the albumin fraction rather than the total plasma protein, because the albumin has a much higher osmotic tension than the globulin and the fibrinogen, the other important protein components of the blood plasma. The circulating electrolytes have an important influence in modifying the edema associated with hypoproteinemia, and the evidence is strong that it is the sodium ion and not the chloride ion that tends to aggravate the preexisting edema. Calcium and potassium seem to have the opposite effect. Edemas of cardiac origin are not directly related to hypoproteinemia, except in certain instances of malnutrition. In edemas of purely cardiac origin the increased capillary permeability plays the essential part. The lipemia and the lowered basal metabolism in hypoproteinemia are still unexplained.

# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Sympathectomy for Intractable Pain in Inoperable Cancer of the Cervix.** By J. P. Greenhill, M.D., and H. E. Schmitz, M.D., Chicago. The Journal of the American Medical Association, July 1, 1933, Page 26.

These authors have performed sympathectomy of the superior hypo-gastric plexus on thirteen patients who had inoperable carcinoma of the cervix and were suffering from extreme pain. They have been gratified by the instant relief following operation in all of their cases and state that the patients have required the mildest analgesics after operation. They have noticed no disturbance of bladder function.

They state they have had no technical difficulty in performing the operation and heartily recommend its use in such cases, pointing out that there are only two satisfactory ways of relieving the intractable pain that is associated with inoperable malignant tumors in the pelvis. Both are surgical. They discuss the difficulties of the first—cordotomy with its tremendous technical difficulties and with the possibility of not completely relieving the pain in some or producing paralysis in certain other cases. They point out that the second-sympathectomy, has the advantage of less risk, is more certain, and can be performed by the gynecologist.

They review the principles of the operation, the anatomy involved and the technic required. They have followed the Cotte operation. Numerous references are given to the best literature on the subject.

**Comment:** Sympathectomy for the relief of pain is a valuable operative procedure which has probably not received the proper attention in this country. Certainly one feels that it is to be preferred to cordotomy where the depth of the incision into the spinal cord entirely controls the question of relief of pain. If not deep enough pain persists, if a little too deep paralysis results. Some of the French enthusiasts have done fundamental and splendid work in this field of sympathetic nervous system surgery, and while their indications for the operation are considerably more extensive than we feel are justified there are a number of situations in which such surgery is an invaluable adjunct.

—Wendell Long.

**A Bizarre Abdominal Tumor in a Child** (*Tumeur abdominale bizarre chez une enfant*). By E. Apert, Médecin de l'hôpital des Enfants,—Malades—Paris. La Presse Médicale, July 29, 1933.

This is a very important report because it demonstrates the supreme necessity of industrious investigation, logical thinking, and accurate discrimination.

A little girl of six years was brought to hospital with a diagnosis of acute appendicitis because there was pain in right abdomen, accompanied by vomiting.

The temperature was above 104. There was a little cough. Physical examination of the lungs was negative. There were rose spots about the hair line on forehead, neck and behind the ears. Soon there were red patches on arms and thighs.

Fortunately, the surgeon on duty excluded appendicitis because there was no abdominal rigidity, and because the temperature was too high.

It was suspected that the child was developing one of the contagious exanthemata. She was placed in isolation quarters. The eruption quickly disappeared, and there was little or no cough, but high fever continued. An interne pointed out that while the entire right side was painful there was particular sensitiveness to percussion below the right clavicle, and he suggested the possibility of a silent pneumonic area, "comme s'est fréquent a cet age."

The chief of the service examined the patient. He noted that the entire right side of thorax and abdomen was painful, and that pressure increased the pain. It was more acute in costo-vertebral angle. Flexion and extension of the leg were painful. He suggested psittosis or a perinephritic phlegmon.

The surgeon who had seen the patient on admission saw her again. He was still more convinced that she did not have appendicitis because there was no rigidity and no evidence of peritoneal irritation, notwithstanding the prolongation of the illness. He did not believe that there was a phlegmon in kidney area because there was no contraction of the sacro-lumbar muscular mass. He thought that the pathology was higher up, and ventured the suggestion that it might be an osteomyelitis of a transverse process.

The temperature remained above 104. There was no more cough. Auscultation was negative. There was hyperesthesia over entire body, but the most tender point, on light pressure, was in the subhepatic region. These were the findings in the service of general medicine to which patient had been transferred.

Palpating deeply, but with as much gentleness as possible, one was able to feel a soft, rounded tumor extending downward from the right costal border. It did not extend into the loin, but it could be felt bimanually with the fingers of one hand in the loin while the other hand made counter pressure over the tumor. The presence of this tumor brought forward other vague hypotheses, but the entire situation was made clear when a radiograph showed a triangular pneumonic area in middle and outer portion of right lung, while another series of radiographs made in an ingenious way a few days later, after inflation of stomach and intestine showed that the "tumor" was a congenital enlargement and prolongation of right lobe of liver. On the same day that the first radiographic work was done there was a typical crisis, the temperature disappeared, and the patient quickly recovered, without any change in size or character of the abdominal "tumor." It was then perfectly clear that all the symptoms had been produced by a "silent" pneumonia.

Calling attention to the extreme rarity of its recognition in children and to the relative frequency of its



recognition in child-bearing women with relaxed abdominal walls, the author relates that the interesting deformity of the liver was described by Cruveilhier nearly a century ago; that Trousseau discussed it in 1864; that Chauffard gave it the name of "languette hepatiche," and that Pichevin called attention to the errors that its presence might engender, in 1882. It is known in Germany as the lobe of Riedel. The article of this author did not appear until 1888. In it he spoke of the deformity as "processus linguiforme."

Comment: 1. No more valuable duty can be performed by physician or surgeon than the making of a definite, and often life-saving differentiation where pain and hyperesthesia of the abdomen is associated with pneumonia or pleurisy. It must not be forgotten that pain and hyperesthesia of the abdomen may be associated with toxemias of various diseases like tonsillitis, la grippe and other infectious processes.

2. I have seen several patients, practically all of them women, with Cruveilhier's, or Riedel's lobe in connection with cholelithiasis. In one woman of between 65 and 70 the tongue-like prolongation extended to the level of the anterior superior spinous process of the ilium. For many months it was confused with a movable kidney. Later there was epigastric distress, followed by pyloric obstruction. Operation was not permitted and there was death from inanition. Autopsy showed the elongated right lobe of liver, a large, tightly distended gall bladder containing one stone, and carcinoma of pylorus with complete obstruction.

—LeRoy Long.

**Prolonged Compression of the Choledochus by a Benign Adenopathy (Compression Prolongee du Choledoque par une Adenopathie Benigne).** By M. M. Brule, Costedoat and Gatellier. La Presse Medicale, July 15, 1933.

This is a report made at the meeting of the Societe Medicale des Hopitaux, Paris, July 7, 1933.

A strong boy of 15 developed a jaundice which at first had the characteristics of a benign infectious jaundice. Later there was complete retention of bile. Seen in the eleventh week, there was profound jaundic and enlargement of the liver. The clinical picture was that of obstruction of choledochus without any clear indication as to the cause of obstruction.

At operation a gland about the size of a cherry seed was found fixed at the junction of hepatic and cystic ducts. No other lesion was demonstrable.

The gland was removed, after which bile was aspirated through a small needle introduced into the choledochus. Following operation, the jaundice disappeared and recovery of the patient was complete.

Histologic examination of specimen showed that it was a simple lymphoma, the cause of it being obscure, since there was no demonstrable inflammatory process in the neighborhood.

—LeRoy Long.

**Dysfunctional Uterine Bleeding—Results In Treatment With Extracts of the Urine of Pregnant Woman.** George Van S. Smith, M.D., and John Rock, M.D., Brookline, Massachusetts. Surgery, Gynecology and Obstetrics, July, 1933, Page 100.

These authors are reporting the results obtained in the treatment of fifty-six patients with dysfunctional uterine bleeding with Antuitrin-S. They have recorded as cured twenty-eight, benefited twenty-two, and unrelieved six. There were two groups of cases:

menorrhagia, twenty-four and metrorrhagia, thirty-two. The dosage most often used in the menorrhagia group consisted of four to six injections of five to ten cubic centimeters over four to ten days. The average dosage in the metrorrhagia group was twenty to forty cubic centimeters of Antuitrin-S given in three to ten cubic centimeter amounts over a period of some three to ten days. They point out that there has been considerable variation in the potency of the drug supplied.

They feel that the treatment avoided operative procedure and irradiation in some of the patients and that cessation of flowing or normal menstruation followed treatment sufficiently often to be more than coincidental. It is their belief that Antuitrin-S has seemed more effective when administered while patients were flowing, that is, in controlling rather than preventing menorrhagia. They also point out that in a few instances the treatment seemed to cause a temporary increase in bleeding or a prolonged staining. On the other hand they also noticed that amenorrhoea and delayed menses occurred often enough to seem related to the treatment.

They also state that relief in cases of endometriosis, pelvic inflammation and fibroids can be taken as additional evidence that the bleeding in these diseases may be primarily dysfunctional and associated only indirectly with the condition.

They likewise point out that the use of Antuitrin-S in bleeding cases presupposes as careful a diagnosis as is possible to be made.

It has been thought that the effect of Antuitrin-S was due to the luteinizing of the ovary with its indirect effect upon the endometrium. These authors have studied the urine of their patients by injecting it into immature rats to determine the presence of the hormone which ordinarily produces follicle ripening of the immature ovaries. They found that in a number of the patients treated that Antuitrin-S this follicle ripening hormone was present during the flow but disappeared when treatment with Antuitrin-S was inaugurated. They speculate as to the possibility of the mechanism of relief being a direct counteraction to this pituitary follicle ripening hormone, which is present in the blood and also found in the urine of flowing women. If this is true the luteinizing effect upon the ovary is but one feature and probably not the most important.

Comment: Much good work in the endocrinology of gynecology has been done in the Brookline Free Hospital for Women and this is additional evidence of it. It is quite apparent that good workers such as these authors are both cautious about the use of such drugs as Antuitrin-S, as clear as possible in their diagnosis and as honest as can be expected in the detailing of results.

—Wendell Long.

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
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**Hipotonía Ocular Con Hemorragias Recidivantes En El Vitreo. (Ocular Hipotonía with Receding Hemorrhages in the Vitreous).** Por El Dr. Jose Moron, Sevilla. Archivos De Oftalmologia Hispano-Americanos Julio De 1933.

Two case reports of repeated intraocular hemorrhage are given including extensive laboratory work and quite detailed objective and subjective examination of the patients. Etiology remained idiopathic.

At the time of the initial inspection the Schiötz tonometer readings were 7mm. in the first patient and 11 mm. in the second patient. Both eyes were affected in the first patient and only one eye in the second patient. Lagranges' colmatage was used in both cases. Hypodermic injections of calcium were given every other day. Vision reported improved from light perception to 3-10, 9-10, and normal, with no recurring hemorrhage from the date of the first colmatage. Tension recorded at the last visit of the patients was 19 mm. and 17 mm. respectively. Moron states that ocular tension is regulated by cephalic blood pressure and watery disposition, and is subjected to the variations of the local circulation. Hipotonia appears frequently in cases of illness in which the wall of the blood vessels are injured such as in syphilis, alterations of the renal functions, arteriosclerosis, diabetes, etc. Repeated hemorrhages in the vitreous more often cause hypertension than hypotension. Hemorrhages are precipitated by the doing of heavy work, during digestion, and during greater arterial tension. By the thickening of the texture of the zone considered filtrante the ocular tension is increased. Increase of ocular tension serves as a check for the hemorrhage by opposing more tense ambiente to less vascular pressure of the vitreous.

#### General Considerations for Radical Sinus Surgery.

George Morrison Coates, M.D., Philadelphia. *Annals of Otology, Rinology, and Laryngology*. Vol. XLII. No. II, June, 1933.

The difference between and the necessity of radical surgery and conservative operative methods for sinusitis is very widely discussed. Opinions vary greatly; Eugene R. Lewis, believes all sinus operations are radical and Coates states that the method one surgeon considers radical is termed conservative by another. Any external operation on the accessory sinuses may be and certain forms of intranasal surgery are radical, relative to the rudiment of danger and the amount of tissue destroyed. Restoration of the sinus to normal condition by acquiring proper aeration and drainage, with very little destruction covers conservative surgery while radical surgery consists of the removal of large parts of the bony wall and of its lining membrane which necessitates obliteration or change in shape or size of the cavity. Under the former definition comes correction of obstructive septal deformities, removal of polypoid hyperplasias, of portions of the middle turbinate that block sinus ostia, drainage of individual ethmoid cells by the removal of small portions of their inferior or mesial walls, enlarging the ostia of the frontal or sphenoid sinuses, and window openings through the mesial wall of the maxillary sinus, either in the inferior or middle meatus. Removal of the entire mucous membrane lining, whether they be frontal, ethmoid, sphenoid or maxillary sinuses, under local or general anaesthesia, where the object is the entire removal of all diseased tissues; or any intranasal operation performed to acquire these results must be classified as radical surgery, since it would be unwise to create drainage with the original source of infection remaining. In the case of an extra dural abscess the approach must be by the way of the internal wall of the frontal sinus, which should be inspected and if necessary removed in all suspicious cases. Eradication of the focus in the most radical way is called for in meningitis when all areas of infection but acute or chronic disease of the sinuses have been dismissed. Indubitable necrosis of the walls of the frontal, ethmoid or maxillary sinuses, as demonstrated by fistula formation or otherwise, calls for radical operation, as do contained tumors of any of the sinuses. This ap-

plies not only to operable malignant growth but also to osteomata and particular cases of fibromata that have invaded the sinuses. Persistent osteomyelitis of the skull generally necessitates a radical clean up of underlying sinus infection, although opinions may differ as to the expedience of continued removal of large areas of infected bone.

As a general rule cases of orbital cellulitis that do not respond to conservative treatment in the early stages and pus continues forming call for radical sinus treatment of the frontal, ethmoid, and sometimes the maxillary sinus. Although occasional cases of extension of ethmoid infection do recover after conservative intranasal treatment, the external approach is generally the best, while in rapidly progressing or neglected cases, the need is definite.

Manifestations for radical surgery in other eye ailments are less positive. In previous years it was believed that retrobulbar neuritis was cured only by radical speno-ethmoid drainage but now it is known that infections from teeth, tonsils, and simple defects in aeration of the posterior sinuses cause many such cases.

Headache without doubt is one of the most important complaints of patients. After other treatments have failed and the pain increases in intensity and frequency, radical surgery is advised for relief. However, assurance should be had that the pain is of sinus origin. If the patient does not receive whole or partial relief, all operations for headache are not necessarily condemned since the diagnosis may have been wrong or the operation not radical enough to have removed all infected cells. Usually one of these two facts is responsible for the failure.

Day laborers may not be inconvenienced by a profuse discharge, anterior or posterior in type, but persons of sedentary occupations may so be incapacitated for work. Nasal crusting and discharge associated with obnoxious odor is a relative indication depending upon the amount of annoyance caused. The patients themselves are rarely aware of the odor in their nose so those with whom they are associated are to be considered. All cases of bad breath cannot be attributed to sinus disease (nor are they all cured or obscured by Listerine).

Having made a thorough study of the case the careful surgeon proceeds with the treatment or operation which he feels will be the most beneficial to his patient, but he will not attempt radical surgery without a complete knowledge of anatomy and applied anatomy of the parts under consideration. These statements have been pointed out many times by the most eminent students of accessory sinuses.

#### Nasal Sinuses: Practical Considerations of General Interest. Dr. Henry M. Goodyear, Cincinnati. *The Laryngoscope*. Vol. XLIII, No. VI, June, 1933.

Goodyear reminds us again that all sinuses are not present at time of birth. The ethmoids, the maxillary sinuses, and the sphenoids are functioning in the newborn. The sphenoid is fully developed at the age of ten years and the anterior and posterior ethmoids at fifteen years. The frontal sinuses begin to appear in the second or third year and continue their development to the eighteenth or twenty-fifth year. These are really an upward growth of the anterior ethmoid cells. An early infection of the ethmoid cells may account for an absence or incomplete development of the frontal sinuses. The maxillary sinuses are the most constant. In the first year of



life they are about the size of a pea. Their growth is delayed until the eruption of the teeth, since they develop in a downward direction.

The mucous membrane lining of the nose is continuous with that of the accessory sinuses. It is reasonable to assume that sinus infection in children is much more common than usually suspected. Coryza, common colds, and eventual sinus infection terminate favorably more often in children because the natural ostium is much larger than in adults. Bronchitis, bronchiectasis, asthma, pyelitis, nephritis rheumatic fever, malnutrition, ocular conditions, and recurrent fevers are some of the sequelae mentioned of sinus infection in children.

A suggestive picture of a chronic sinus infection is that of an underweight, listless, pale child, with a nasal discharge, difficulty in nasal breathing, often cervical adenitis, and the history of frequent prolonged colds. Excessive lymphoid tissue on the pharyngeal wall is also important. If for no other reason than aeration and drainage, tonsils and adenoids should be removed.

Allergic cases can be differentiated by a careful history and examination. A new theory is advanced in using an acid instead of an alkali in allergy. Two cases are cited to substantiate the theory. Endocrine therapy was used successfully in a child after the various other methods had failed.

Ethmoid and maxillary sinus infection occur more often in adults. If after conservative treatment for a few weeks, the infection is not cleared up, an operation is advised. Patients who have refused a radical operation and consented to an intranasal opening have often had as good results as if they had submitted to the radical operation. A cough is present in about twenty per cent of the chronic sinus infections. Intraorbital cellulitis, abscess, and teeth cause many maxillary sinus infections. "With the most liberal consideration the canine route should not be used for drainage for more than a few days of a week."

Pain at the root of the nose, the temporal and occipital regions, and over the vertex usually signifies an acute sphenoid infection. Central scotoma results from sphenoid and posterior ethmoid infections.

Comments: That too much radical nasal surgery has been done, with doubtful results, none can deny. It is here shown that conservative treatment many times benefits the patient as much as radical surgery.

## TUBERCULOSIS

Edited By

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Tuberculosis and Measles. J. L. Kohn and H. Koiransky. *Amer. J., Dis. Child.*, December, 1932.

This study is based on the examination of 20 children with measles, all of whom were known with a reasonable degree of certainty to have been infected with tuberculosis before measles.

A positive tuberculin test was obtained in eighteen. In the two who were not tested, necropsy revealed an old tuberculosis. Frequent roentgenograms were made during and after measles, and in 15 of the cases plates taken before the onset of measles were available for study. The patients could be classified roughly into 6 groups as regards clinical and X-ray findings: 1. Four cases in which a small area of pul-

monary infiltration with hilar adenopathy present before or at the onset of measles showed progressive extension of the infiltration until death ensued five days to four months after the onset of measles.

2. Four cases, showing a similar picture in the lungs previous to measles, in whom scattered opacities subsequently appeared in the lung fields, accompanied by dulness, fine rales, and scattered areas of bronchial breathing, as well as further enlargement of the mediastinal shadows. These children were very sick, but in the course of several weeks improved, the physical signs and X-ray finding receding.

3. Two cases with the so-called primary pulmonary complex. During the measles there was an additional hazy area of infiltration surrounding the site of pulmonary infiltration, from which strands radiated toward the hilar region. This hazy area disappeared entirely within a few days. One of these children died subsequently of tuberculosis meningitis.

4. Two cases that developed large shadows in the lung following the onset of measles, with little temperature reaction and few abnormal physical signs. These shadows persisted for months, the patients doing well.

5. Four cases in which, in addition to scattered areas of pulmonary infiltration, a pleural effusion appeared during or soon after the measles. One of these children (included also in group 1) died of extensive pulmonary tuberculosis and another of tuberculous meningitis. The other two cases when examined fifteen months after measles still showed some fluid as well as thickened pleura.

6. Five cases with very little pulmonary infiltration but with enlargement of the lymphatics of the posterior mediastinum and at the bifurcation larger in extent and denser than similar shadows seen in measles in which previous tuberculosis had not been suspected. After the measles these children recovered rapidly, and the size of the hilar shadow decreased.

Conclusions of too rigid a nature cannot be drawn from this study, particularly since roentgenographic interpretation of pulmonary infiltrations is frequently open to error. However, it would appear that in many cases measles does contribute to a spread of a previously existing tuberculous process. In the six children that died (5 of whom were autopsied) this deduction could reasonably be made in all but one instance.

**Tuberculophobia. Miles J. Breuer.**

This author in his paper, first likens the phobias which are connoted by the word "tuberculosis" to those which arise at the mention of "heart disease." The latter have always been recognized and consequently the physician has learned to temper his conversational terms in dealing directly with the patient.

In the realm of tuberculosis, the importance of psychology, and an understanding of the patient's mental bearing have become only recently regarded as a major factor to guide the attending physician in his dealings with the tuberculous patient. Previous to the last decade or two, the majority of the cases diagnosed as pulmonary tuberculosis were so far advanced that the disease itself was ample worry and the matter of a neurosis was an incidental problem. However, in more recent years the importance of the so-called early diagnosis has been so widely stressed and the technique of accomplishing it has been distributed among the general profession with sufficient

thoroughness, that an increasing number of early and low-grade cases are being recognized.

In the words of the author: "The ambulant patient, the patient with a minimal lesion, the constitutional chronic whose tuberculosis is incidental, are all being informed that they have tuberculosis of the lungs." To the general public, the word "lungs" is more terrible than "heart." It carries with it all sorts of stigma and visions of incurability, pilgrimage to other climates, and certain death, all of them relics of the Dark Ages of tuberculosis during the past century.

It is recognized that so far, the chief weapon against the disease is early diagnosis, coupled with proper treatment. If further strides are to be made toward lowering the mortality, early diagnosis must be stressed and proper treatment augmented to insure as far as possible against the progression of the low-grade case into one far advanced with but small hopes of recovery.

It is plain to see, then, that the physician must study his case well, and in the light of the patient's temperament, must guide him in such a manner that he will neither be overly alarmed nor, on the other hand, take the diagnosis too lightly and allow the disease to become progressive and therefore endangering the life of the patient.

Due to improper or hasty handling of minimal cases, many are allowed to become serious neurotic problems and remain permanently handicapped and incapacitated because the mental factor interferes with proper clinical recovery, or if clinical recovery has taken place, it interferes with the resumption of useful function in society.

Contrary to this type of patient, there are those who are prone to take too lightly a diagnosis of minimal tuberculosis, and consequently, fail to take proper and adequate steps toward bringing about arrestment. It is a sad sight indeed, to see such cases who have been fortunate enough to be diagnosed early, yet the physician has fallen down in failing to recognize the patient's reaction and has not taken the time and interest to thoroughly instill into the patient the importance of proper curative measures. As a result, the patient loses his big chance for complete recovery and is seen next in a far advanced, and decidedly less hopeful, state.

We have then, in dealing with minimal cases, two disastrous end results which must be carefully avoided. Only by careful study of the patient's mental and emotional state, can the physician intelligently deal with the individual case in such a way as to avoid unhappy results.

**Bilateral Phrenic Exaeresis in Pulmonary Tuberculosis.**  
H. Schwatt. *The American Review of Tuberculosis*, August, 1933.

This paper includes a report of a case with a view of presenting indications, immediate and late results, and the legitimacy of bilateral radical phrenic interruptions in the treatment of tuberculosis.

The number of cases where bilateral paralysis has been done are relatively few. It was thought at one time by the older physiologists and clinicians that bilateral paralysis of the diaphragm was not compatible with life. However, it has been subsequently shown not to be the case, and, in fact, in some cases with complete paralysis of the diaphragm, there is little or no respiratory embarrassment. The degree of the respiratory embarrassment however, is obviously proportional to the extent of disease and the loca-

tion of the undiseased lung tissue which is carrying the load of respiratory function.

Since this procedure has for its object the splinting of the lungs, the results of its use will be good only in so far as the selection of the cases in which it is to be used is carefully made. The danger of an excessive rise of the diaphragm may be avoided to a certain extent by restricting the treatment to those cases in which it has been impossible to induce artificial pneumothorax, and by consecutive, rather than simultaneous, nerve operations.

In cases where pneumothorax is impossible, due to more or less complete obliteration of the pleural space, it is safe to assume that there are adhesions of the diaphragmatic pleurae which will prevent excessive rise. On the other hand, a rise sufficient to be of considerable benefit has been noted in cases where such diaphragmatic adhesions were quite extensive. The author feels that a certain interval should be allowed between operations. Such an interval permits evaluation of the effect of the diaphragmatic rise on the corresponding pulmonary lesion as well as on the contralateral lung.

The first operation obviously should be performed on the side of the more active and extensive lesion. There have been cases noted in which the effect of the unilateral paralysis and subsequent rise of the diaphragm have been so favorable, that the second operation became unnecessary. While this is the looked for result, it has been noted in other cases that the diaphragmatic paralysis on one side is followed by increased activity or reactivation and spread of the lesion. Here too the interval between operations is of great value.

The author raises the question as to the justification of permanent bilateral paralysis of the diaphragm. Temporary interruption by crushing the nerve, or novocain injection, are looked upon more favorably in the case of the second operation rather than complete permanent paralysis. In the former, the effect is a total paralysis lasting for varying months of time and sufficiently long enough to allow observations and conclusions as to the results being obtained. The author's opinion regarding this is, that following a phrenic exaeresis on the more diseased side, the less radical temporary paralysis on the other side is the method of choice. The more radical operations can be undertaken subsequently if desired.

In discussing the indications, the author makes the general statement that they are essentially the same as for bilateral pneumothorax when the latter cannot be accomplished due to obliterated pleural spaces. The procedure may also be considered in cases in which a bilateral pneumothorax is ineffective in collapsing cavities; when a phrenic interruption has been done on one side and a pneumothorax on the other side; and if the latter is ineffective or can no longer be maintained or if the lower lobe is adherent. It is especially indicated in those cases in which the lesions are of a destructive nature with cavitation and are located in the basal or middle portions of the lungs.

In summarizing, the author brings forth the following as important considerations concerning the use of bilateral diaphragmatic paralysis.

1. Bilateral phrenic interruption, especially the operations producing permanent paralysis of both hemidiaphragms, must be considered as a serious procedure in bilateral chronic pulmonary tuberculosis and should be approached with considerable reservation.
2. The procedure is applicable in only a limited group of prognostically unfavorable cases.
3. Danger from excessive rise in the diaphragm



may be avoided to a great extent by limiting the procedure to cases in which the pleural cavities are obliterated by adhesions and by allowing for an interval of at least one month between the operations.

4. The method of choice for the second operation is one which does not produce a permanent paralysis of the hemidiaphragm but eliminates its function for three to six months.

5. The procedure may be followed by a striking clinical and anatomical improvement in hopelessly advanced cases without serious disturbances of the respiratory capacity.

6. Too much should not be expected in most cases, since even in unilateral operations, the results are uncertain and cannot be foretold.

### DERMATOLOGY, X-RAY AND RADIUM THERAPY

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**Fungicidal Action of Some Common Disinfectants on Two Dermatophytes, C. W. Emmons, Ph.D., Archives of Dermatology and Syphilology, July, 1933, Volume 28: Number I.**

In the consideration of this subject, the essayist reviews the literature in regard to other workers' methods, pointing out some technical laboratory faults in their tests.

The author used twenty different drugs in his tests, basing their efficiency on the relative value of phenol as a fungicide. The following table details his painstaking results.

#### Fungicidal Action of Various Disinfectants

Fungicide	Phenol T gyp- seum	Coefficient M. albi- cans
Iodine (from potassium iodide solution) .....	3,125	3,600
Iodide (from tincture) .....	2,974	3,480
Sodium hypochlorite (from surgical solution of chlorinated soda).....	2,338	2,090
Sodium ethyl mercurithiosalicylate.....	146	
Hexylresorcinol .....	78	67
Mercuric chloride .....	74	76
Selenium sulphide .....	44	6
Thymol .....	26	17
Phenyl-mercuric-nitrate .....		14
Malachite green .....		10
Gentian violet .....	4	4
Potassium permanganate .....		7
Salicylic acid .....	1	7
Compound solution of cresol .....	1	3
Tri-ethanolamine polysulphide		
Tri-ethanolamine		
(5.50% sulphur) .....	2.5	
Formaldehyde .....	2.5	2.5
Copper acetate .....		2
Benzoic acid .....	1	2
Phenol .....	1	1
Sodium sulphide .....		0.4

Emmons very wisely correlates the facts bringing out the idea that the actual action of medicine in a test tube and on the skin may be quite different. For example, salicylic and benzoic acid has proven to be a very definite fungicidal agent clinically, but its phenol coefficient rated it rather poorly. He likewise stated that iodine with its superior fungicidal value

"is of therapeutic value as far as it can penetrate to the layers in which the fungus is growing.

"Sodium hypochlorite as used in surgical solution of chlorinated soda is highly fungicidal when freshly made up." This is the preparation that has been found to be of value around dressing rooms for the prevention of spreading fungus infection.

**The Use of Extract of Spleen in Certain Dermatoses, Max S. Wien, M.D., and Minnie Oboler Perlstein, M.D., Archives of Dermatology and Syphilology, June, 1933, Volume 27, Number 6.**

The consideration of this subject first reviews the literature showing that other investigators have found that the use of spleen extract in certain dermatoses varies from practically no results to very excellent results as reported by one enthusiastic writer.

The authors present a series of fifty cases as follows. twenty-five of eczema; the second group were cases of "seborrheic dermatitis, infectious eczematoid dermatitis, hypostatic eczema, various forms of nondescript dermatitis of limited extent and of relatively short duration or secondary toxic exfoliative dermatitis."

Their conclusions revealed that the spleen extract is of distinct value in urticaria, dermatitis herpetiformis and secondary toxic exfoliative dermatitis. It is of limited usefulness in the temporary alleviation of certain phases of the subjective sensations in eczema. They contend that treatment must be prolonged, using a series of injections approximating 10 gm. of spleen substance being given at each injection. They do not share Paul's "rapid findings of instantaneous cure" by spleen extract.

**Some Nonspecific Dermatoses—Their Responses to Spleen Extract, Theodore Combleet, M.D., Archives of Dermatology and Syphilology, June, 1933, Vol. 27, Number 6.**

This article considers the use of spleen extract more on the basis of laboratory investigations as compared to the above article.

The author's summary and conclusions are as follows:

#### Summary and Conclusions

"Two patients with dermatitis herpetiformis and four with eczema were studied for from one to three months. Eighteen different observations were made every other day, before and during therapy.

1. The great general instability of the factors studied was the most outstanding observations.

2. This denotes an inability to adjust rapidly to stimuli or an over-compensation for them.

3. Such measurable instabilities are probably a few of the bases for such vague, inclusive terms as Czerny's diathetic state.

4. The capacity for allergy can be built from such a background.

5. In dermatitis herpetiformis clinical improvement was associated with: (a) increased capillary permeability; (b) an increase in the carbon dioxide content and Ph of the blood; (c) a decrease in the potassium calcium ratio; (d) an increase in inorganic serum phosphorus, and (e) a decrease in blood cholesterol.

6. In chronic eczema the only correlation noticed

was a shortening of the blister time, which indicates increased arteriolar sympathetic tone.

7. Injections of spleen extract cause a decrease in the eosinophils count which lasts for about three days.

8. This change in the number of eosinophils cannot be correlated with clinical changes.

9. Previous injections of spleen extract decrease the inflammatory response of a positive patch test.

10. There are no histologic changes in a dermatitis from the use of spleen extract.

11. At times spleen extracts are of distinct but limited value in eczema and other nonspecific dermatoses."

The editor of this column formerly used spleen extract in a total number amounting to about 8-10 cases. In cases of eczema, nearly all showed considerable temporary improvement, but lasting results were not obtained. Urticaria, in a general way, gave a similar response.

#### R. B. DAVIS COMPANY COCOMALT

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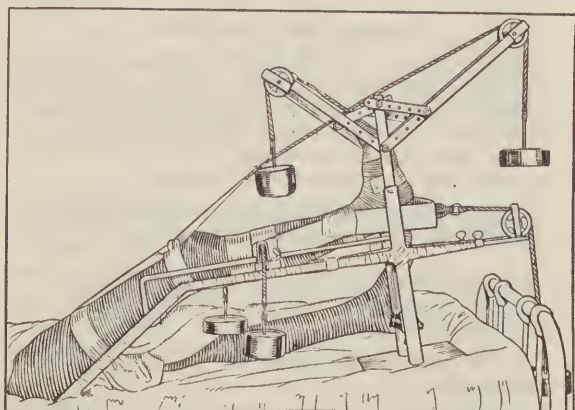
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#### TULAREMIA: REPORT OF CASE WITH POST-MORTEM OBSERVATIONS AND NOTE ON STAINING OF BACTERIUM TULARENSE IN TISSUE SECTION

Margaret Foulger, Alfred M. Glazer and Lee Foshay, Cincinnati (Journal A. M. A., March 19, 1932), report a case of tularemia in which: (a) auto-inoculation of two fingers of the left hand by contact with the primary lesion on the index finger seems to be highly probable; (b) the use of convalescent serum was without beneficial effects; (c) lesions of the peritoneum, both focal and diffuse, are described for the first time, and (d) a new staining method revealed the presence of Bacterium tularense in tissue sections from certain of the involved organs.

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**MUSKOGEE, OKLAHOMA**



# HEREDITARY ARTHRODYSPLASIA ASSOCIATED WITH HEREDITARY DYSTROPHY OF THE NAILS

John W. Turner, Atlanta, Ga. (Journal A. M. A., March 25, 1933), reports an hereditary arthrodysplasia, a disorder that is transmitted from parent to child, that causes deformity of the different joints interfering with their function and that, so far as it has been possible for him to determine, has not been reported previously. His report is based on a study of two families in which thirty-five of seventy-nine persons are affected. About five years ago the ninth individual in the fourth generation of one of the families came to him as an obstetric patient. He noticed that she suffered from hereditary dystrophy of the nails and that her knees appeared flat when her legs were extended and angular when the legs were flexed on the thigh. A short while later one of her sisters consulted the author because she frequently fell when running. Her knees also appeared flat when extended and angular when flexed and it was hard to locate the patellae, which could not be found on the anterior surface of the knees. The tubercle of the tibia stood out prominently with the patella absent from its customary position. The ankles were thick, the malleoli being unusually large and contrary to the normal type, the internal malleoli larger than the external. The longitudinal arch of the foot was apparently less developed than normal, a slight degree of flatfoot being present. The shoulders showed a marked prominence of the acromial end of the clavicle, the appearance being similar to that presented after dislocation of the acromial end of the clavicle. However, in the deformity due to arthrodysplasia the step down from the acromial end of the clavicle was downward and forward to a prominence caused by the head of the humerus. Apparently the glenoid cavity of the scapula was well in front of a line drawn downward from the anterior margin of the acromial end of the clavicle, and the head of the humerus with its muscle group stood almost in bas relief. The patient was unable to extend fully the arm at the elbow, and the carrying angle was increased. The internal condyles were unusually prominent on the inner side of the elbows. The wrists showed no very marked variation from normal. It appeared that there was a slight elongation of the carpal region, and the ends of the ulnar were barely noticeable when the hand was pronated. The fingers could be hyperextended at the metacarpophalangeal and interphalangeal joints. Roentgenograms of the different joints showed deformities which may be considered characteristic. In one of the families every member showing dystrophy of the nails also suffered from arthrodysplasia, twenty-six of thirty-nine persons being affected. In the other family, twenty-seven of the forty-one persons suffered from dystrophy of the nails, but only nine suffered from arthrodysplasia, these not being specifically shown in the geneological chart. Hereditary dystrophy of the nails of the toes and fingers is a comparatively rare disorder, but not so rare that most physicians have not seen several cases. The degree of the disorder of the nail varies from almost total absence of the nail to a nail that is scarcely distinguishable from a normal nail except that it is thinner. Trophic disorders of one sort or another are frequently found in those individuals to whom the term constitutional inferiority is applied and Barrett and other authors

have referred to the association of mental deficiency with this anomaly of the nails. The association of disorders of other derivatives of the ectoderm has been reported and ichthyosis, keratosis palmaris, hypertrichosis, alopecia, and premature or abnormally late eruption of the teeth have been referred to as coexisting stigmas. Indeed, the mental deficiency usually noticed in patients suffering from this dystrophy may be considered as evidence of future involvement of ectodermal structures. The defects with which dystrophy of the nails has been associated in all previous reports have been found in ectodermal derivatives exclusively. The author's patients have had no associated defect of any derivative of the ectoderm but have shown a rather marked disorder of the portions of the skeletal system, a derivative of the mesoderm.

## COMMENTS ON INTERNSHIP

According to W. C. Rappleye, New York (Journal A. M. A., March 25, 1933), the internship has come to be widely regarded in this country as a part of the basic training for the practice of medicine, as attested by the facts that about 95 per cent of recent graduates voluntarily take a hospital experience of one year or longer, that seventeen states require the internship as a prerequisite for admission to the licensing examinations, and that a similar number of medical schools in the United States and Canada require it before granting the degree of Doctor of Medicine. The type and arrangement of the hospital period should not be standardized, however. It is important that the educational features of the internship should not be rigid or uniform for all hospitals but should provide a variety of opportunities of high quality adapted to the educational needs, previous preparation, and life programs of different individuals. The internship is only a part of the whole scheme of medicine and, as such, several kinds of internships will best meet the requirements of different students. There are 696 hospitals, representing 221,174 hospital beds and offering 6,261 internships, which are approved by the American Medical Association (1932). The mere fact that a hospital is a good hospital does not necessarily mean that it provides a satisfactory internship, for the latter requires an interest on the part of the staff in the training of the young physician and an ability to provide him with a satisfactory educational experience. If the internship is to be successful as an educational venture, some individual or group on the staff of the hospital should be responsible for seeing that opportunities are actually provided for the intellectual and professional development of the student, and that the work of the intern is properly supervised by responsible members of the staff, particularly in regard to the discussion of cases, differential diagnosis, proper treatment, and the use of the laboratory, library and other facilities in the study of patients. Only about 10 per cent of patients are hospitalized. The great majority of sick persons are not obliged to go to a hospital. Outpatient services should be used as much as possible to assist the intern in becoming acquainted with the more common illnesses and with the wide range of social and economic factors which are often important in diagnosis and treatment.

# WEE MODERNS

By BERTON BRALEY

The babies of these present days are raised upon a system,  
You count their calories of food and on a card you list 'em;  
They're spanked upon a schedule and petted by the clock  
And you musn't ever jounce 'em and you musn't ever rock;  
Physicians choose their style of dress and fix their hours of sleep  
And tell you when they ought to laugh and when they ought to weep,  
Their every eccentricity is catalogued and filed  
For the modern type of baby is a scientific child!

Time was that mother raised them in a rather casual way,  
With a bit of help from grandma—but that isn't done today;  
The bringing up of babies is a far from simple art  
And you need a dozen volumes and a blueprint and a chart  
A clinical thermometer, a stethoscope, a scale  
Some test tubes and a dictaphone that registers each wail,  
The modern mother's regimen is very far from mild,  
For the baby of the present is a scientific child!

Oh yes, I am describing the *modern* baby now!

Oh, the old folks sniff about it and the jesters jest a lot  
But the modern type of baby is a healthy little tot,  
He may be robbed of baby-talk, of many pats and kisses,  
But there's a heap of colic and other ills he misses;  
And in spite of all the sentiment that in our cosmos lurks  
There isn't any question that the modern method works—  
For the scientific baby is a husky little tad,

A CREDIT TO THE DOCTOR, AND THE MOTHER, AND THE DAD!

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### UPPER RESPIRATORY INFECTIONS IN CHILDREN\*

HUGH EVANS, M.D.  
TULSA

The dictionary definition of a cold is a disorder caused by exposure to cold, dampness or a draft, often with acute catarrh. This illustrates the old idea of an association with weather conditions. The definition used by medical men, however, is that a cold, coryza or rhinitis is an acute inflammatory condition of the mucous membrane of the nose.

Regardless of the definition the condition is one of the most common in medicine, especially in children, and its effect is most far-reaching. Each year neglect in treatment demands a heavy toll in morbidity and mortality.

The function of the nose is to detect odors and to moisten, warm and filter the air before reception into the lungs. The nose, therefore, has a great work to perform.

The cause of a common cold is a debatable and has been a debatable question for years and probably will be for a number of years to come. Let us look at a few of the theories:

1. It is conceded that it is an infection. Bacteria are normally present in the upper respiratory tract even a few hours after birth. These are apparently benign as long as the resistance is normal but due to one of many factors, they become active and cause inflammation. The infection depends upon the immunity of the host and the number and virulence of the invading organisms. Bacteria develop due to any cause which lessens the vitality of the local epithelium or the general resistance.

2. On the other hand there are numerous followers of the theory that colds are caused by a filtrable virus.

Among conditions which predispose to rhinitis are:

(a) Sudden changes in temperature and humidity. Chilling of the mucous membrane of the upper respiratory tract causes a vasoconstriction and later a compensatory congestion and infiltration. This interferes with the normal function of the nose. Continued dry cold does not cause harm as illustrated by the absence of colds in the inhabitants of the Northlands where the temperature remains low and the humidity high.

(b) Modern steam or hot air heated houses and poor ventilation are responsible for many colds in the cities.

(c) As a rule children are more susceptible to chilling as they have a relatively larger body surface in proportion to their bulk. Children are subject to colds due to improper dress, either too much or too little, more commonly the former. They are heavily covered at night, tied in and before morning they get hot, perspire, and finally succeed in getting rid of the excessive cover, and then they chill. Maybe once would not hurt but each night the mother continues the same procedure and before many nights go by she has succeeded in giving her youngster a nice cold.

(d) Swimming pools are, of course, wonderful aids in spreading colds and other infections. The youngsters congregate, cough and expectorate over each other and then improperly dry their hair and bodies, then go home in an open car with lots of draft.

(e) In some schools the children go from room to room or from building to building and in their haste forget to put on coats or hats and with a variance of temperature of 75 degrees in the school room to say 40 or 50 degrees out of doors, they take cold.

(f) In summer the picture shows are cooled by artificial means and are comfortable while inside but after the show

\*Read before Muskogee County Medical Society, Muskogee, Okla., May 8th, 1933.

the sudden change in temperature often helps stir up a coryza.

(g) Frequent attacks in children are often due to hypertrophied and diseased adenoid tissues in the throat. These harbor infection and tend to make the mucous membrane more susceptible to infection. Other defects such as nasal polypi or deviated septa, hair lip or cleft palate, lower the resistance to infection.

(h) Then, too, we have our colds from external irritants, such as dust, gas, chemicals or smoke. These produce a hyperemia of the mucous membrane with a reduction in function. This leads us to another type of cold and that is the allergic or sensitive nose which is excited by certain pollens. This type is more common in summer than winter.

It is known definitely that colds are easily transmitted from person to person by direct contact. Thus it is a bad practice to take children into crowds and congested places. This accounts for many colds around Christmas time when the mothers take the kids to 'Kresses.'

Some of the eminent doctors of Vienna claim that colds are due to clogging of the system with resulting constipation. Of course, the cure for this is yeast.

Rhinitis is also a forerunner of most of the exanthematas: measles, scarlet fever and diphtheria practically always have some congestion of the mucous membrane. In syphilis we have a rhinitis which is quite chronic and the mother explains to the doctor that the baby has had a cold since birth.

The symptoms of colds are often slight but there is practically always a sense of discomfort. The onset is usually quite sudden and there is a generalized feeling of malaise. The appetite is lost or nearly so. This is particularly true in babies, for as the nose becomes blocked the act of nursing becomes quite complicated, since they have to breathe through the mouth. Accordingly they are unable to take the normal amount of food. In the same way they are not able to take enough water and the water equilibrium is disturbed and in this way the body temperature is increased. The swallowing of the mucus, and they will not spit it up, upsets the stomach and interferes with digestion.

Due to the shortness of the eustachian tube the middle ear is often involved due

to direct extension. This may be mild, and disappear in a few hours or it may suppurate and open itself or have to be opened.

Then too, the sinuses are more or less involved in most of the acute head colds. I do not mean to say that all colds cause sinusitis but after repeated insults there is no reason why the sinuses cannot and do not show pathological changes. Children do have relatively larger openings from the sinuses and thereby are probably afforded better drainage than adults, thus avoiding a lot of dangers of sinus infection.

In addition to sinusitis and otitis media there are other complications such as mastoiditis, laryngitis, bronchitis, conjunctivitis, tracheitis and broncho-pneumonia. The prognosis of which depends upon the resistance of the patient and the virulence of the invading organism together with the proper treatment.

Every case of rhinitis should be regarded as infectious and should be so treated. There is as far as I am able to learn no specific yet for colds. These few general points may be noted.

In a child the economic question does not arise and we can without hesitancy recommend absolute rest in bed, with strict isolation. If we can get warm, moist air, that is the best, but I do not advise cold air even if it is fresh. I prefer that the windows be closed at night and if necessary have some heat on in the room. The cold air tends to irritate the already inflamed mucous membrane. Furthermore, I believe in this treatment for pneumonia. The temperature of the room should be between 65 and 70 degrees with no drafts.

It is important to push plenty of fluids, water, citrus fruits and alkalis. Elimination should be maintained but the child should not be purged.

Locally one may use mineral oil and ephedrine or adrenalin to shrink the mucous membrane. Antiseptic solutions such as argyrol and neosilvol are also of value.

The diet should be nutritious but not too concentrated or too hard to digest.

There are many drugs used by mouth,



all of which have their following. The chlorine method had its fling but nothing is said about it now. Vaccines are used but not advocated during an acute attack. Their place seems to be that of a prophylactic measure.

That brings us to the point, we should try to develop immunity to colds in our children from birth. We should practice prophylactic medicine on all the children. If possible, a baby should have mother's milk. If conditions arise whereby this is not practical or possible, a formula well-balanced with proteins, carbohydrates and minerals should be fed regularly. Much has been said about the vitamins and until we prove they are the bunk we should go ahead and include them in the diet. The cod-liver oil and Haliver oil give the vitamins A and D. Fruit juices C, vitamin B is supposed to be in cow's milk. With the right diet the baby should have the proper elimination.

Always keep the baby away from individuals with cold because they are contagious. Avoid drafts and advise against taking the baby out in the night air.

During the summer months it is a good idea to give systematic sun baths and in the winter the use of the ultra-violet helps build up resistance to respiratory infections. Cold showers if begun during the warmer months and continued throughout the colder months also help build up resistance. The proper amount and kind of clothing and the use of a little judgment in dressing a child helps to avoid colds. Too much clothing, or cover at night, is as bad as too little. The right temperature of the house or the school room is very important.

In older children, who are susceptible to colds, the clearing up of all foci of infection such as tonsils, adenoids, and teeth help give the child more resistance. Vaccines if given with discretion and judgment often are of value and may at times give wonderful results.

Rest and sleep are essential to the well-being of all children of all ages and this is especially true in regard to colds. But if parents pay proper attention to diet, clothing, heat and ventilation, sleep and rest, elimination and recreation, they are doing their best to build up resistance and give their child an immunity to colds.

## PRENATAL CARE

W. A. DEAN, M.D.  
TULSA

In selecting this subject, "Prenatal Care," it was done so advisedly and with no apologies to anyone, for it is one part of the practice of medicine which is sadly neglected. Especially, is it neglected by the general practitioner and the country physician, who can't or don't sufficiently encourage their pregnant cases to come in for regular and repeated examinations during the entire time of carrying their babies.

Let me encourage the education of our women to the importance of an early selection of the physician to be in charge so that she may be under his constant care. In so doing, and after repeated examinations, no one can question the better condition these women will be in for delivery, and our morbidity and mortality rates will show an immediate lowering. However, do not misunderstand me—that is not the panacea for lowering these rates; it helps. A large percentage is from the improper handling of these cases at the time of delivery.

This being a paper on prenatal care, it may be somewhat out of order for the following remarks. But in the handling of a case the idea is: if you are attempting to use asepsis in the strictest sense of the word, don't sterilize your hands, use sterilized instruments and gloves, then contaminate same. If that is done then you are wondering why your patient developed an elevation of temperature or septicemia.

Regarding the first visit of patient to your office; give the patient as thorough an examination as it is in your power to do. Have the patient completely disrobe and properly draped so you will have free access for a meticulous examination. With her on your examining table, start with the head and work down, looking for every point of a possible foci of infection which may be: ears, nose, sinuses, tonsils, teeth and thyroid. Every physician in checking over the heart and lungs should be able to discover whether or not there is any pathology in these organs.

Referring first to the heart, if a lesion exists: Pardee' says, "Whether or not to allow a woman with heart disease to go through pregnancy depends on a prog-

nosis." The majority of obstetricians and general men are not able to make proper prognosis. We owe it to our patients and their families, in having one of our competent cardiologists make this prognosis: if he deems it safe to allow her pregnancy to continue; it should be his responsibility to watch this heart throughout pregnancy and labor.

Second: Wherever a tubercular condition is suspected or known to be present, White<sup>2</sup> feels that pregnancy should be allowed to continue in mild tuberculous women, where the condition has been inactive for two years or when the woman is quite desirous of having a child. It is the essayist's opinion, that knowing of the presence of a tubercular condition in a patient, she in turn should be under the supervision of a lung specialist. Again quoting White<sup>3</sup>, he says, 50% of the children born of tuberculous women die each year." Bullock's<sup>4</sup> sign of pregnancy early in tubercular women can be used to great advantage. It is in brief as follows: An artificial acetoneuria is found after eight or nine hours of fasting, following a meal rich in fat; while in non-pregnant women forty-eight hours are required to obtain this result.

The borderline between health and disease is narrowed down when the cardiologist and specialist, in tuberculosis, work hand in hand with the obstetrician and those who do obstetrics with general practice.

No physical examination is complete until an exhaustive physical examination has been made, checking liver, gallbladder and spleen for enlargement; kidneys, pelvic organs and rectum for possible foci of infection that might be present and can safely be eradicated without undue shock to the pregnant uterus. Watch out carefully for any venereal disease; when found it should be intelligently and thoroughly treated. That is where educating our women to early prenatal care will give you time for eradicating or arresting any disease or foci of infection.

Toombs<sup>5</sup> says, "Fowler, studying the records of 600 private cases, found focal infection in 42 2-3%; 75% of these women showed excessive vomiting; all the cases of late toxemia; 80% of threatened, and 71% of actual premature terminations of pregnancy." He goes further to say that F. S. Kellogg observed 12% of parturient women, who had manifested toxemia during pregnancy, had febrile temperature

after delivery; and no less than 25% of eclamptics ran an elevated temperature after delivery. This was following various forms of delivery, so it could not be traced to puerperal infection, thus pointing toward a systemic infection existing before labor began. Perhaps why more are not affected carrying these foci of infection is because they have developed a temporary immunity. In spite of this immunity, when her metabolism becomes unbalanced she loses this resistance to the poisons.

Whatever may be said or written on the toxemias of pregnancy it will be of no avail to our pregnant women toward reducing our mortality and morbidity rates unless those doing obstetrics search out these foci of infection in the early prenatal stage, and eradicate all that can safely be done, and institute medical care as the condition requires. By so doing the mother and fetus will fall victim to the least possible amount of poison, thereby giving both a greater chance towards life and health.

As all prenatal cases require and should demand periodic examinations during the entire pregnancy, one of the most essential examinations is the blood pressure reading. In most writings you read regarding the taking and interpreting of readings, but very little is said about the diastolic reading. Invariably the systolic is the reading taken under consideration. In diagnosing a toxic state in our patients, allow me to stress to you the very great importance of the diastolic reading. In my opinion, and others, it can safely be said that as long as you keep your diastolic pressure under 90 mm. even though the systolic pressure rises above 140 mm. your fear of eclampsia developing can be greatly reduced. Don't misunderstand me, it is possible but not so probable that eclampsia will develop with a diastolic reading of 90 mm. or less, and a high systolic reading of 140 mm. or above. Your patient is a potential eclamptic and measures should be instituted at once to lower that diastolic pressure. The writer's aim in this paper is to stress the importance of not allowing that stage of toxemia to develop, by the proper prenatal care. It is admitted, we all get patients who will not cooperate. Do your duty and institute what measures you can, and try to educate these women to the advantage of proper prenatal care.

This education, if persisted in by us,



will in a few years go far towards reducing our maternal and fetal mortality as well as morbidity. You may ask what this education should consist of: After a careful physical examination and history taking, (allow me to urge every one to keep some kind of a form, where a history can be kept and physical findings charted on each subsequent visit of at least once a month, with blood pressure, urinalysis and any complaints or findings you wish to record), you should urge the thorough care of the teeth, gums and throat, the proper diet which will be laxative in nature, contain our important vitamins; foods that are nourishing yet will not produce too much gain in weight; or that is, not quite a pound a week throughout the ten lunar months. Stress the importance of suitable dress, both as to weather and constriction of the body. Sunshine, walking, free consumption of water and milk are all conducive to the very best of health; frequent bathing with warm water; however, it is known that tub baths in the last few weeks of pregnancy invite infection into the uterus. Advise against sitting baths and recommend sponge or shower baths for at least the last month of pregnancy.

Where labor is drawing near, it is the physician's duty to make abdominal examinations frequently in order to know the exact position of the fetus. Where not favorable to a cephalic presentation attempt to make it so, or at least see that your patient doesn't get started in labor with a transverse or other position impossible of delivery. Many a life could have been saved if the baby's position had been changed at the patient's last visit to her physician.

Just a few more remarks that can well be included in routine of proper prenatal care; that is the care of the skin, breasts and the type of shoe to be worn. When a woman becomes pregnant her breasts, as a rule, grow, especially primiparae. These should be supported with correct fitting brassiere to prevent possible losing of tissue support, which if not aided, will stretch and produce pendulous breasts. Fat being deposited at varying points over the body causes an overstretching of the skin, causing it to break, leaving the woman marked for life. She should be instructed to daily massage this tightening skin, thereby avoiding greatly this skin breaking.

It is pitiful to behold a young pregnant

woman tripping down the street with high heeled shoes on and the more so, the further along in her pregnancy. She is in constant danger of falling and causing premature separation of the placenta, with premature delivery or death of child in utero. The further along the pregnancy goes the more she has to throw her shoulders back and the harder it is to watch her step.

In conclusion, someone, whom the writer is unable to recall, has advocated the reduction of salt intake the last two months of pregnancy and instituting calcium and cod-liver oil; claiming that it allows an easier diability of the cervix during labor, therefore appreciably shortening the first stage.

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#### TREATMENT OF ADDISON'S DISEASE WITH AN EXTRACT OF SUPRARENAL CORTEX (CORTIN)

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Frank A. Hartman, George W. Thorn, L. Maxwell Lockie, Clayton W. Greene and Byron D. Bowen, Buffalo (Journal A. M. A., March 5, 1932), report seven cases of Addison's disease treated with cortin. Three represented the severe stages of the disease and four others presented less severe aspects of the syndrome. Conclusive evidence is furnished that an extract of the suprarenal cortex prepared by the ether-alcohol method is affective in alleviating the symptoms of Addison's disease. The requirements of different patients for cortin vary over a wide range, depending no doubt on the degree of suprarenal insufficiency and also on individual variation. It has been found in animals with complete suprarenalectomy that the amount of cortin required to keep them in good condition varies considerably. This variation exists even under optimum conditions, but with infections, trauma and exercise much more cortin is needed. When the requirements are not great, the doses not only are small but need not be given frequently. As the patient's demands for cortin increase, the dosages must be stepped up both in quantity and in frequency, as is necessary, for example, in infections or in trauma. This obtains in animals and seems to be true in man. The daily total requirements both in man and in animals seem to be less if the dosage is frequent.

## ABNORMAL UTERINE BLEEDING— (OBSTETRICAL)

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There is nothing that excites a patient more than the appearance of blood. We have ante-partum and post-partum hemorrhages—hemorrhages from incomplete abortions, retained placenta, placenta praevia, abruptio placenta, ectopic pregnancy, etc.

Abortions are divided into clean or spontaneous, and infected. In clean abortions they are complete or incomplete. Dr. Litzenberg divides abortions into early, intermediate and late stages. He states that 25% of all pregnancies end in abortions. He also states that the common alleged causes, such as; trauma, displacements, tumors, etc., are relatively unimportant. The real causes are much more important. He thinks that death of the fetus in utero is the cause of most abortions, and this in turn is due to defects in the ovum or its environment (endometrium, decidua or placenta). If the cause is in the ovum itself it is due to inferior vitality of the ova or spermatozoa, which may be attributed to poor general health, venereal disease, toxins, infection and disturbed endocrines. If the cause is due to environment, a great majority can be traced to abnormality of the endometrium, decidua and the placenta, as for example; first, infections (deciduitis from previous endometritis); second, infectious diseases; third, focal infections; fourth, toxins. It has been proven by Hofbauer and others that lead, mercury, arsenic and bacteria will produce death of the ovum and pathological lesions that are quite similar to those of early toxemias. Therefore, it seems that in searching for the real cause of abortion, one should consider defected germ plasm as much more important than the things we have always taught, such as; trauma, misplacements, tumors, etc.

In Dr. Litzenberg's classification of abortions he considers the first stage as the decidual stage or the first six weeks of pregnancy where the ovum has no attachment to the uterine wall. It lies entirely within the decidua. The second stage, he calls the attachment stage. During this six weeks the villi gradually attach the ovum to the uterus until at three months the placenta is definitely formed.

The third stage, he calls the placental stage which extends from the twelfth to the twenty-eighth week, which is the period of viability.

The treatment of abortions depends to a certain extent on the stage. Early abortions are often complete, and, as a rule, there is very little hemorrhage, the entire ovum being expelled spontaneously. However, I would like to suggest here that the uterus at this time is a hot bed for infection, and, in my opinion, this is one reason why the professional abortionist often loses his patient when he gets an infection. The second and third stages of abortion are the ones which give us most trouble from uterine hemorrhage, because the fetus may be expelled and the placenta remain as a foreign body to cause bleeding. In this case the abortion should be considered as potentially infected and the uterus should be emptied. Often, however, if we would put our patient to bed, elevate the head of the bed and give small doses of pituitrin or morphine, the uterus in a great majority of cases will empty itself. If hemorrhage is profuse, then the uterus should be emptied surgically, and by surgically I should suggest that there are only two instruments to use in emptying the uterus, especially if the pregnancy is less than twelve weeks. For the past ten or fifteen years I have been following the method of Dr. C. Jeff Miller of New Orleans, who says that the uterine curette should be placed in the museum as a curiosity for the future generations. He uses nothing more than his fingers and a sponge holding forcep.

If the patient is not bleeding and the cervix is not dilated, put her to bed, give morphine, and leave her alone. If, however, a woman has been to a mid-wife or so-called professional abortionist, and she has an elevated temperature and the cervix is closed, keep out of that uterus. If she is bleeding, pack the vagina with gauze which has been soaked in 4% mercurochrome. Give her morphine for her pain, treat her systemic condition; forty-eight hours later remove the pack and the uterine contents can then be removed, as above described, with a sponge holding forcep. Then the temperature will immediately drop and your patient will have at least sensitized herself, and her chances for recovery will be much better than if the uterus had been invaded with instruments. In these cases morphine should always be given for pain and ergot in small doses



should be given for 4 to 5 days following complete emptying of the uterus. Any hemorrhage following threatened or incomplete abortion should be controlled with a thorough vaginal pack without invading the uterus.

Hemorrhage from placenta praevia is entirely a different proposition and Potter says that the type of placenta praevia, whether it be marginal, lateral or central, makes no difference and one cannot judge the amount of hemorrhage that a woman may have, regardless of the type of praevia. In my experience I admit that I have been unable to diagnose one type of placenta praevia from another. Therefore, I agree with Dr. Potter, that one cannot predict the seriousness in these cases, and I feel sure that the proper procedure is to deliver the case as soon as the diagnosis is made.

From the beginning of pregnancy the cervix becomes softened from below upward so that at seven and one-half months the cervix is open enough to admit the index finger. Often the first symptom which occurs is a sudden gush of blood which is due to separation of the placenta from a little area due to softening of the cervix and the intensity of uterine contractions. In other words, slight uterine contractions and partial separation of the placenta are the causes of the painless, causeless gush of blood. As a rule, the diagnosis should be made on the history and one should not make a vaginal or rectal examination until he is ready to do something. Some of our enthusiastic research workers are experimenting on the diagnosis of placenta praevia now by injection of lipiodol into the amniotic sac and later taking an X-ray picture which they claim shows in a fairly definite way the outline of the placenta. This has not been perfected and I am sure it is not a procedure that we should tackle here.

Morphine will come nearer controlling hemorrhage from placenta praevia before the uterus is emptied than any other drug, because, if given in large enough doses, it stops the uterine contractions by its paralytic action on the central nervous system. I am sure that we have all observed that sometimes morphine in smaller doses stimulates the uterine contractions and hastens delivery. This is due to the fact that small doses of morphine act as a stimulant instead of a depressant to the central nervous system. (Sollman, Solis Cohen).

The patient should be sent to the hospital and delivered as soon as one is reasonably sure that the diagnosis is made, unless she is willing to do what you want her to do to get a viable baby. The more the patients spills or bleeds the less chance one has of saving the baby. The indications for operation are:

1. Period of viability.
2. Amount of blood loss.
3. Condition of the cervix  
(amount of dilatation).

As a rule transfusion should be done before any surgical procedure is attempted. Remember that placenta praevia patients are the worst surgical risks with whom a surgeon has to deal. The operative treatment consists of:

1. Packing the cervix with gauze.
2. The Voorhees bag.
3. Caesarean section.
4. A thorough packing of the uterus after delivery.

Abruptio placenta, ablatio placenta, premature separation of placenta and accidental hemorrhage are names for the same condition and it is sometimes very difficult to differentiate from placenta praevia, but the symptoms are:

1. History of trauma—more or less rare.
2. Sudden uterine pain at the placental site with faintness, pallor and cold sweats.
3. At first a drop in pulse and then an increase in pulse rate.
4. Tender, tense uterus that is rapidly increasing in size.
5. Fetal movements cease, the baby cannot be outlined by abdominal palpation, there are no fetal heart tones, and the mother presents a general picture of being desperately ill.

As a rule, one can get a history of toxemia of pregnancy, nephritic or pre-eclamptic in origin. There may or may not be hemorrhage from the vagina.

The treatment depends on:

1. Whether or not we have a live baby.
2. Primiparae or multiparae.

If a primiparae and a live baby, a blood

transfusion and caesarean section should be done at once. If the baby is dead it should be treated with a tight binder, rupturing the membranes, insertion of a Voorhees bag, and craniotomy and evisceration, if necessary.

In a multiparae simple rupturing of the membranes with a gauze packing and the insertion of a Voorhees bag as in placenta praevia, in addition to the tight abdominal binder, and the administration of small doses of pituitrin and rather large doses of morphine.

The best indications that I know for immediate operation are:

1. A drop in the blood pressure.
2. A drop in the percentage of haemoglobin and number of red blood cells.
3. A marked rise in the pulse rate.

The cause of post partum hemorrhage is bad management of the third stage of labor. There are three physiological acts in the third stage:

1. Separation of the placenta.
2. Expulsion of the placenta.
3. Retraction or complete hemostasis.

The signs of separation of the placenta are:

1. Descent of the cord.
2. Rise of the fundus.
3. Change in the shape of the fundus and appearance of blood in the vagina.

Until these signs are observed, one should play hands off. We are in the habit of giving one ampoule of pituitrin as soon as the baby is born, then wait for the above signs, to repeat; descent of the cord, rise of the fundus, and change of shape of the fundus and appearance of the blood in the vagina. Then gently Crede the fundus and the placenta will be delivered without difficulty. When there is a tendency toward a profuse bleeding after the baby is born, one must not wait too long to remove the placenta manually. Procrastination here is often disastrous for these patients will lose too much blood very quickly, and they sometimes even bleed to death. If the hemorrhage does not cease following the administration of pituitrin and manual removal of the pla-

centa, then the uterus should be thoroughly packed at once. Polak says that no woman should be allowed to bleed to death as long as a man is on the job and has his two hands with him. One hand can be inserted into the uterus while the other hand makes pressure on the fundus and hemorrhage controlled in this way. We have one condition, however, known as placenta accreta, where the placenta is grown into the muscularis of the uterus and its complete separation is impossible. In this case, if a thorough packing will not control the bleeding, then Bland says that the uterus should be removed by hysterectomy. This is a radical procedure and one never knows when it is indicated until the patient's condition is such that a major operation of this nature would be hazardous. So far as I know, I have encountered only one such case. This was where we had made a diagnosis of placenta praevia and during the caesarean section we found that it was impossible to remove the placenta except by dissecting it off of the side of the uterine wall. We were fortunate in controlling hemorrhage here by a mercurochrome pack. However, this patient was also suffering with an undiagnosed Vincent's infection of the mouth and later developed an abscess of the lung from which she died about ten days following the operation.

Since the administration of pituitrin has become so popular, we feel that sometimes a retained placenta is due to a constriction of the lower segment of the uterus or Bandel's ring. I have been in the habit of giving adrenalin, 5-10 mm., with the hope that the uterus would relax and the placenta could then be removed. My results in this have not been very satisfactory, and I think it is because I have not given adrenalin in large enough doses. However, in looking up literature on this I find Wright states that the uterus receives both motor and inhibitory nerve fibers from the sympathetic or thoraco lumbar and that it does not receive fibers from the parasympathetic.

He states that adrenalin inhibits uterine contractions both in the virgin and pregnant uterus. It acts on the myo-neural junction of the post ganglionic fibers of the sympathetic nerves.

Cushny and Solis Cohen say that adrenalin relaxes the non-pregnant uterus and stimulates the pregnant uterus. When the hemorrhage from a retained Bandel's ring



is alarming, profound anaesthesia with ether or chloroform and a manual removal followed by a thorough packing of the uterus is essential.

I have seen two women die from post partum hemorrhage immediately following the expulsion of a normal placenta. I thing both of these cases were cases in which the placenta was inserted in the lower segment or inactive portion of the uterus, and as we know that there are no retraction fibers in the lower uterine segment, there was no way of nature controlling the hemorrhage. Anyone who has ever tried to pack a paralyzed or a non-contractile uterus immediately following delivery knows that it is almost impossible because it is so flabby and does not respond to any form of uterine stimulant.

Sometimes our most dangerous and profuse post partum hemorrhages are caused by the atonic uterus where a patient has been allowed to remain in the second stage of labor so long that the uterine muscles become absolutely paralyzed and after the placenta is removed it does not contract and retract.

Ordinary hemorrhages can be controlled by making pressure on the fundus with one hand and with a folded vulva pad pressing against the perineum with the other hand. If one will hold the uterus in this manner for three to five minutes the hemorrhage in most cases will be controlled.

We must not forget the possibility of post partum hemorrhage from other sources than the uterus. For example; from lacerations of the vagina, cervix or vulva. These can be easily detected and repaired if one is prepared for a thorough inspection. In fact, we are recommending now that all cervical lacerations be repaired immediately following delivery.

#### ESTIMATION OF CARDIAC AREA IN CHILDREN

Paul C. Hodges, Wright Adams and Wayne Gordon, Chicago (Journal A. M. A., Sept. 16, 1933), point out that roentgen examinations conducted for the purpose of finding out whether the heart of a sick child is enlarged presume a knowledge of the normal size of the heart of that child. Tables and formulas exist for predicting the normal size of the heart from the height and weight in adults, but there has been need for similar equations for children. As the result of teleroentgenographic studies on 169 carefully selected normal children ranging in age from about 3 years to about 19 years, such an equation has been developed. It reads:  $F = -0.180H + 1.045W + 13.7$ . A table is published by means of which estimates of the normal size of the heart can be made rapidly without computations.

## ECTOPIC PREGNANCY AND ITS TREATMENT

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The term ectopic pregnancy, or extra uterine pregnancy, for these terms are used synonymously, means all pregnancies which occur outside the uterine cavity. Such as tubal, ovarian, abdominal, pregnancy in adenomatous growths far from the uterine cavity, and a very rare case of pregnancy which occurs in the cervix, also Dean W. Hart reported a very interesting case of uterus unicornis with rudimentary left uterus, and right ectopic.

Riolamus in 1604, was the first to describe definitely a case in which the foetus was found in the fallopian tubes. As far back as 1594, Primeron operated a woman and found a dead foetus in a cyst, which had formed near the umbilicus. Many such operations were performed at long intervals, but Lawson Tate in 1883, was the first to operate deliberately on a case of tubal rupture.

This condition is one which in my opinion is very important for it is not very rare, and is one that I consider a real emergency. Shuman estimated that at least one tubal pregnancy occurred to every 300 normal pregnancies. My reason for saying that this is an important subject is, if we can recognize these cases early, and institute proper treatment we can save nearly all of them, but if we fail to diagnose them we often fail to give them proper treatment, and the patient is lost because of our mistakes. For this reason this paper will emphasize more especially the diagnosis of this condition.

#### ETIOLOGY

The etiology is some abnormal interference with the migration of the ovum from the ovary to the uterus. The conditions which interfere are, salpingitis which causes destruction of the cilia; adhesions from inflammation originating within the tube or outside, which may distort the tube by bending or pressure so as to partially obstruct its lumen: Tumors either in the wall of the tube, or arising from other structures adjacent may cause pressure which narrow the lumen of the tube: Malformation such as spiral twist: and diverticulum of the tube, but most cases give history of infection or at least steril-

ity for a long period of time, which usually means salpingitis.

#### PATHOLOGICAL POSSIBILITIES

In order to study the diagnosis we must be familiar with the pathological conditions which might be present; therefore will mention and describe them briefly.

First: Before rupture where the developing embryo with its membranes is still surrounded by the unbroken tube.

Second: Intraperitoneal rupture with single moderate hemorrhage. In this condition the blood drains into the culdesac of Douglas. Adhesions form over this blood filled cavity which shuts it off from the remaining part of the peritoneal cavity, and forms a condition known as pelvic hemocele. This blood may be gradually absorbed with very little disturbance or may require drainage, and the very early embryo is also cast off from its nourishment, and is usually absorbed without causing further trouble.

Third: Intraperitoneal rupture with repeated moderate hemorrhage. In this condition we have the membranes remaining partially within the broken tube, and the extruded embryo continues to grow, but causes trouble later. The first hemorrhage leads to a peritoneal exudate, and adhesions which bind together the adjacent parts, and we have the blood mass, the broken tube, and growing embryo surrounded by a wall of exudate and adherent intestines which lessen the danger temporarily. This process of rupture followed by nature's kind protection may occur several times, provided the patient does not succumb to severe hemorrhage, or peritonitis. We find in this class of patients a gradually increasing mass accompanied by frequent attacks of pelvic pains and marked tenderness. These are often mistaken for ordinary pelvic inflammation, because of the fact that the hemorrhages are not severe enough to produce the ordinary symptoms of hemorrhage such as, rapid pulse, pallor, thirst, etc.

Fourth: Intraperitoneal rupture with profuse hemorrhage. In this condition we have free rupture of the tube with enormous amount of blood being poured out into the peritoneal cavity with all the symptoms of internal hemorrhage.

Fifth: Tubal abortion. This is the expulsion of the fertilized ovum through the end of the tube into the abdominal cavity,

this being capable of forming a secondary abdominal pregnancy.

Sixth: Rupture into the broad ligaments in which the break of the tube will take place between the folds of the broad ligament and if the extruded embryo continues to grow it forms a broad ligament pregnancy.

Seventh: Interstitial pregnancy or pregnancies which occur in the wall of the uterus, though outside of the uterine cavity, this being the interstitial portion of the tube. In this form rupture usually does not take place as early as in the ordinary form, and may be capable of rupturing into the uterine cavity, and terminating in a normal intra uterine pregnancy.

Eighth: Ovarian pregnancy where the developing ovum is found within the ovary.

Ninth: Wandering pregnancy where the growing ovum is found in the peritoneal cavity without any apparent connection to the tubes, uterus, or ovary. Such a pregnancy mass may be attached to, and receive blood supply from various structures.

Tenth: Extra uterine pregnancy, carried to near term in this condition the membranes remain attached to the tubes, and receive nourishment there, while the foetus develops in the peritoneal cavity, or the embryo and membranes may be expelled from the tubes, and find attachment and receive nourishment from any adjacent structures; one case reported where the attachment was to the liver.

#### DIAGNOSIS

Before rupture of the tube or hemorrhage into it, diagnosis is very rarely correctly or positively made. Of course with history of long period of sterility, as missing menstruation with nausea and vomiting, with slight pain on one side, and with the palpation of a mass in the region of the tube one can be suspicious of ectopic, but this mass can resemble so closely a loop of intestines or engorged ovary or enlarged tube from infection, and the uterus will reveal all the symptoms of a normally pregnant uterus, that one cannot differentiate it from a normal intra-uterine pregnancy; however, with the above symptoms one can observe the patient very closely, and with the death of the ovum, or soon after she will start menstruating which continues for longer than normal period with no clots, or chor-



ionic villi, but only decidua passing, with a positive Aschheim-Zondek test, one can be sure he is dealing with ectopic pregnancy, and this lady can be operated before she has a complete rupture with the grave symptoms of internal hemorrhage.

Rupture with repeated moderate hemorrhage is probably the type which is more difficult to diagnose, because it can simulate so closely any acute or subacute pelvic inflammatory condition, and again because the patient is often not alarmed about the one symptom which is so important, viz: a sharp pain in her side. She is not alarmed because many women have some pain during the first months of pregnancy, and this pain in many cases soon begins to decrease. These attacks of pain continue at intervals, and with the death of the embryo she will begin to flow, so is much relieved because she feels sure that she is not pregnant. If we will observe a lady with the above history we will often find other special symptoms, which are not pathognomonic, but are very suggestive of a tubal pregnancy. These symptoms are, missing menstruation in a lady who previously menstruated normally and gives history of a period of sterility. Sudden onset of pain often very severe, and often causing collapse for only a short time. Bloody vaginal discharge as above stated recognized by the patient as the return of the normal menstruation, but it is not as a rule as free, and does not stop in a few days as the normal menstruation should, but persists as an irregular bloody discharge. Only slight fever; however at the onset of the trouble the temperature may go up to 102 or even higher, but in a few days it will drop. Evidence of internal hemorrhage which in this case may be very difficult to detect, for we are dealing now with a condition in which we have repeated moderate hemorrhage; however we will have some rigidity of the abdomen due to the peritoneal irritation, and there is usually more pain and tenderness over the point of the hemorrhage. Exacerbation of pain without apparent cause and with very little elevation of temperature. Ordinarily signs of pregnancies such as, nausea and vomiting, pain and discoloration of breast, softening of the cervix, and a positive Aschheim-Zondek test.

Absence of intra uterine pregnancy, which is very difficult to determine unless we resort to a procedure of curettage, which in my opinion is not a wise

thing to do, because if we should be dealing with an inflammatory pelvis it would certainly aggravate the condition, and if we are dealing with extra uterine pregnancy this may produce serious intra abdominal hemorrhage; however, this has been done by good men for the purpose of getting a specimen for microscopic examination.

Rupture with profuse hemorrhage is probably the easiest to recognize for in this condition we have the typical history which has been mentioned above, and is very important. With this history, and with these attacks of acute excruciating pain in the abdomen, nausea and vomiting, rapid and weak pulse, face blanched, nose, forehead and fingers cold, cold sweat, respiration short and labored, abdomen rigid and tender, and often distended, with dullness on percussion at the lowest point, this dullness changing with the patient's position. On vaginal examination we find the uterus soft and boggy, movable, usually, but causing much pain. It may be displaced to one side, but is usually not displaced unless it is raised up in a sea of blood. There is usually a soft fluctuating wall around the cervix, which is more marked in the culdesac.

The white blood count will be about 20,000, the red blood count will be lowered, depending on the amount of blood lost, but the hemoglobin will not change much until about seventy-two hours has elapsed from the time of hemorrhage. Puncture of the culdesac with a long sharp needle will verify diagnosis, but this is usually not necessary. About forty-eight hours after the hemorrhage the hematoma has formed, and then we often have a displacement of the uterus and a palpable mass on one side.

#### DIFFERENTIAL DIAGNOSIS

The differential diagnosis between ectopic pregnancy and several other conditions such as: Abortions, appendicitis, salpingitis, tumor mass, ovarian cyst with twisted pedicle, or other tumor masses, angular pregnancy, hemorrhage from other causes is very important.

Time will not permit the discussion of all these separately but if we will know well the history, and physical findings in ectopic pregnancy, I consider that we have the greatest aid in the differential diagnosis, for other things may simulate ectopic but very rarely do we have a history in these other conditions which exactly

fits that of an ectopic pregnancy. Abortion is probably the most frequent condition which we have to differentiate, and this can be done almost every time by history, for in abortions we have slow or quiet onset pains similar to labor, external hemorrhage, profuse or moderate, with clots, and parts of the ovum passing. The symptoms of hemorrhage is proportionate to the visible blood, while in ectopic we have stormy onset, excruciating pains, external hemorrhage is slight, no clots, no ovum expelled. Symptoms of hemorrhage is not in proportion to visible blood, and often a mass beside the uterus can be felt.

In appendicitis we have no signs or symptoms of pregnancy, pains which usually start around the umbilicus, and later localizes in the right side with fever, nausea and vomiting, tenderness and rigidity in higher up, leucocytosis usual, patient is flushed and excited, uterus and adnexa normal.

I consider the differential diagnosis between ectopic and an ovarian cyst with a twisted pedicle is one of the hardest to make, for an ovarian cyst with twisted pedicle will produce nearly all the findings of ectopic pregnancy, but here again if we will consider the history we won't usually find, period of sterility, skip of menstruation, bloody vaginal discharge.

#### TREATMENT

All cases of unruptured tubal pregnancies should be operated as soon as they are diagnosed, because a dangerous hemorrhage might occur at any moment; however, as stated above, these cases are not usually diagnosed until after rupture.

After rupture it was formally considered wise by some to wait in some cases until the patient began to recover from the shock of the first hemorrhage, for it is true that only occasionally the first hemorrhage is fatal, but we are unable to tell regardless of how closely we watch the pulse or blood pressure at what moment additional bleeding will take place, which might put the patient beyond the reach of surgical help.

The hemorrhage is usually controlled, or nearly controlled by the increased intra abdominal pressure, the clots which form about the rupture, and the lowered blood pressure. For this reason I prefer not giving intravenous stimulations until the abdomen is opened; however, this should be started either on the table or immediately after the patient is returned to bed,

as the loss of blood is responsible for her condition, there is nothing so helpful as transfusion, so this should be done as soon as blood is properly matched.

Ether is the anesthetic of choice as it acts as a stimulant for a short period of time, so it is not often that a patient will succumb if the surgeon will work fast. It is during the hours afterwards when the combined effects of hemorrhage and post-operative shock are at work, that our most strenuous effects are indicated.

In addition to transfusion we should give hypodermoclysis of salt solution. Coffee and salt solution by rectum. Keep the patient warm with hot water bottles, give morphine as often as necessary to keep her quiet. Elevate foot of bed, and give other stimulants such as caffeine, sodium benzoate, camphor, etc. Auto-transfusion has been done in some cases, but is not considered as safe as transfusion of fresh blood. In advanced cases of ectopic the treatment depends on whether the foetus is or is not alive. These cases are nearly always secondary abdominal pregnancies, and in some cases the child will live until a false labor starts; however, if we do not operate before, or very quickly, often this false labor starts, the baby will die, and the mother's life is jeopardized.

I take this opportunity to report two cases:

*Case No. 1:* Combined intra and extra uterine pregnancy, which is not very often seen; however, similar cases have been reported. Weibel in 1905, collected about 119 cases, Penkert found 17 cases in 1912-13.

*Case No. 2:* Tubal rupture with repeated moderate hemorrhage, followed by severe hemorrhage.

*Case No. 1:* On March 30th, 1933, I was called to see a lady thirty-nine years old, mother of three children, ages twenty, sixteen and twelve, one miscarriage six months ago. She had skipped one menstrual period, but had been feeling perfectly well, had been attending a church social nearly all day. Came home about 5:00 P. M., and as she stepped out of the car she had severe pains in abdomen, which caused her to hold abdomen with hand and go into her home falling across the bed. Her husband called me and said his wife was cramping as though she was going to menstruate, and asked me to send her something for the pain, which I did. About



two hours later he called asking me to come over as quickly as possible, that she had fainted. When I got there her pulse was good volume—seventy-six, color rather pale, and she was feeling better, but had rather severe pain in abdomen. I had her taken to the hospital immediately, saw her about one hour later in the hospital, at which time she was vomiting, still having severe pain in abdomen.

W. B. C. 20,000; R. B. C. 4,500,000, urine negative, no vaginal discharge. Uterus soft, enlarged, movable, but on movement there was much pain; could not feel any mass on either side of uterus. However, her pain was more marked on the right side. I called consultation, and we decided that it would be safe to wait until morning to operate. The next morning at about 6:00 A. M., the nurse called and reported my patient to be practically pulseless, and in bad condition, and that this had happened almost suddenly. I made diagnosis of tubal rupture and hurried to operate. On opening the abdomen I found an enormous amount of blood, and quickly pulled up the uterus, finding the right tube ruptured about one inch from the cornea of uterus, with products of conception free in the abdominal cavity. I took out the tube, and as much of the clotted blood as possible, getting out as quickly as possible. Her condition began to improve immediately, and the next day she began to flow. On the third she passed a small foetus. She flowed about ten days, passing some small clots, and has made a slow but satisfactory recovery.

*Case No. 2:* On December 22nd, 1932, I was called to see a lady because of chest symptoms, which I found to be a left lower lobar pneumonia. I sent her to the hospital, and she was critically ill with this condition for eight days, but terminated by crisis and made a satisfactory recovery. However, on my first visit she gave history of a bloody vaginal discharge, which she thought might be a miscarriage, for she had skipped one menstruation. This vaginal discharge continued through her course of pneumonia, and four or five times she had sharp shooting pains in pelvis, which required morphine for relief, but she did not collapse nor did she show signs of hemorrhage. I did not do a vaginal, because I thought if there was an ectopic pregnancy with repeated small rupture any movement of the uterus or bimanual examination might produce severe hemorrhage which would be a serious complica-

tion of pneumonia. On about the fourteenth day I allowed her to go home in ambulance, but cautioned her to stay in bed, for I was suspicious of an ectopic. On January twelfth, I was called to see this lady, the one calling telling me she had severe pain in right side of abdomen, and she had fainted. When I reached her home I found her in bed screaming with pain in right side of pelvis. Pulse rather rapid, she was pale, and her abdomen rigid. I gave her morphine and sent her to the hospital, for I felt sure that my suspicion diagnosis was confirmed. During her trip to hospital, which was about two miles, her pulse had become weak and thready, and the rate had increased to about 140. Pelvic examination revealed uterus soft, movable, but causing severe pain. The culdesac bulging with a soft boggy feeling, and around the uterus there seemed to be a soft wall. I could not detect a mass although I felt sure the rupture was on the right side. I was somewhat worried about her chest condition, but decided that her best chance would be to operate at once, which I did. On opening the abdomen I found the cavity filled with blood, the right tube ruptured at its distal end, and the products of conception free in the abdominal cavity. I did the ordinary operation as quickly as possible, and with transfusion and ordinary stimulation she made a very nice recovery.

#### MORTALITY

Statistics show us that in an efficient hospital with competent surgeons the mortality should not be over four per cent, while in 1876, just seven years before Tate's first operation, Parry published the results of five hundred cases treated conservatively with 7.2 per cent mortality. With a comparison of these figures we can feel sure that radical treatment is correct, and we cannot pay too much tribute to the gynecologists who have advanced our knowledge of the pathology, diagnosis and treatment of this condition.

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DISCUSSION: *J. F. Kuhn*, Oklahoma City.

I think we should compliment the essayist of this paper. I think he has presented the subject in a brief way and very fine manner, so that there is very little to add. There are two statements that he made, however, that will bear inspection. First, etiology. I think he has continued to have the old conception as to etiology. There is not much doubt that inflamma-

tory disease has played a considerable role as a causative factor in ectopic pregnancies, but the theory is all wrong that ectopics result from inflammatory conditions in the fallopian tube, and the most satisfying thing that I get out of his paper is that he refutes his own statement and all that he has read. The first patient had a double conception, one within the uterus and one within the tube. She was the mother of three children. There was no history whatever of pre-existing disease. She had, undoubtedly, normal tubes that had functioned normally. The modern idea is that ectopics result from hormone disturbances that prevent the proper ovum development and that because of this there is faulty development of the proper pregnancy bed within the uterine cavity, and therefore, there is not the proper movement of the ovum, conception occurring in the fallopian tube to the uterus, consequently forming pregnancy. In the interstitial type of pregnancy within the walls of the uterus, in every suspicious instance the patient should be hospitalized, where she can be observed and where we can pay proper attention to her until the diagnosis has been perfected, and we will not have those terrible calamities, which brings me to the final point of argument, that these patients should be operated as soon as the diagnosis is made. Please bear in mind if the ovum is living it may continue to live even as an intra-abdominal pregnancy, and if that is true, the Catholic church insists that this should not be done if there is any possibility of a living ovum. I am not a Catholic, but they do have a perfectly just right for their belief, and if we are to listen at all we should give heed to what they teach, at least in their presence. It is not necessary to lose the life and it is perfectly proper to hospitalize the patient and keep her under observation until the ordinary signs of death of the ovum take place, and when death of the ovum does take place there is a beginning flow of blood from the uterus. This is a sign of death of the foetus.

Now as to diagnosis, we know that the decidual cells form within the uterine cavity and then from within the fallopian tube. We know that if the history is rather vague, and in the majority it is, we know that in making a differential diagnosis we can withdraw some tissue from within the

uterus without harming the patient and make a microscopic examination.

*Dr. Gibson.*

I wish to thank Dr. Kuhn for his discussion, and I am sorry so many have left, but I am glad some of the fellows who discuss papers from a legal standpoint did leave.

#### MIKULICZ'S DISEASE AND DIABETES

Henry J. John, Cleveland (Journal A. M. A., July 15, 1933), has recently observed four patients with enlargement of the parotid glands and mild diabetes. These patients did not seek medical advice because of the diabetic condition, although in one diabetes had been diagnosed previously but the patient had not had adequate or systematic treatment. In the four patients the enlargement of the parotid glands was noted in the clinical examination, with subsequent detection of glycosuria and hyperglycemia. The parotid hypertrophy could not be attributed to any inflammatory or infectious process. All four of these patients were obese, and there was a striking similarity in their facial appearance. Not one of them has been observed more than a few months, and during that time there has been no diminution in the size of the parotid glands. The diabetes was mild in all these cases and was easily controlled with moderate dietary restrictions and small doses of insulin. Whether the parotid swelling represents a compensatory process brought about by decreased pancreatic function, as Charvat and Flamm have suggested, remains an open question. The author reports these cases with the hope that it may stimulate more clinical observations and more interest in the possible relationship between the salivary glands and the pancreas. At present the problem is largely of academic interest, but further experiments and observations may bring forth knowledge that may be of significant importance clinically.

#### APPRAISAL OF ANTIRACHITICS IN TERMS OF RAT AND CLINICAL UNITS

Alfred F. Hess and J. M. Lewis, New York (Journal A. M. A., July 15, 1933), carried out a further clinical test on irradiated milk, "yeast milk," cod liver oil and viosterol, the study being controlled with bio-assays of the various antirachitic preparations. It was found that the antirachitic milks, especially irradiated milk, require a surprisingly small number of rat units (from 35 to 40 daily) to confer protection or effect healing, and that viosterol requires the largest number. Irradiated milk seems to be the most desirable antirachitic for prevention on a communal scale. Only from 20 to 24 ounces daily is needed to assure protection. This therapeutic agent has the advantage of being automatic and inexpensive and of providing calcium and phosphorus as well as the antirachitic factor. The marked distinction between clinical units and rat units implies that the present method of rating antirachitic agents is misleading. Their respective biologic potencies, as expressed in rat units, are not interchangeable. Each type must be appraised for itself. Its minimal number of therapeutic units must be ascertained clinically and then expressed in terms of rat units. The wide differences in activity between various antirachitics indicate that a clinical as well as a laboratory pharmacology must be taken into account.



## THE LATEST REFINEMENTS IN THE VACCINE TREATMENT OF CHRONIC ARTHRITIS, NON SPECIFIC TYPE

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The title of my paper automatically suggests that what is to be set forth here is the result of additional observation since I discussed this subject last year. Even then, we already were observing these additional reactions but were unable, or felt that the time was not yet right, to set them forth as definite conclusions, which could be passed on to a meeting of this type.

In order to present these additional perfected observations in reactions of patients to vaccine injections in an orderly way, it, in my opinion, would be best to start at the beginning and set the processes forth step by step so that the subject will be clear in our minds at the moment.

When a rheumatic patient receives an injection of vaccine, certain conditions ensue in the system of that patient, whether such reaction is clinically demonstrable or not. It has been rather a surprise to us, and it has caused on our part a good deal of thought, that in some cases we apparently observed no reaction to the injection of vaccine, yet the patient would not seem to get better. We thought probably the dose was too small and in one or two cases increased the dose, yet the patient continued to not get any better. On the contrary, he, even though he had no clinical demonstrable reactions, continued to sink further into his invalidism. We then began, in such cases, to very markedly reduce the dosage and promptly on the marked reduction of the dose, the series of reactions set forth under general and focal reactions occurred. This lack or failure on the part of the patient to respond to a dose of vaccine, which is very much too large, I believe can be called or designated the "sinking reaction." For that is what really happens when the patient is given an injection of specific vaccine which is in excess of that which he can handle. He does not react with subjective symptoms or objective signs but simply continues to sink deeper and deeper into that crippling condition known as arthritis. This sinking or increased arth-

ritic disability develops insensibly and it behooves us who use vaccine injections to be ever on the lookout for it.

It is our rule; that when a patient does not react to an injection of vaccine with definite clinical symptoms or become better as will be set forth under the improvement reaction, to take the stand that the dose of vaccine given to him has been much too large. We drastically reduce same to as much as one hundredth and often as much as one thousandth of the former dose.

In order, however, to set forth the series of reactions that we have observed in cases after a dose which is much too large is moderately reduced, let us say that such a dose, which has caused this sinking reaction, is decreased by only one tenth. In many cases, the patient will develop, within a few hours to not later than a day, subjective and objective symptoms, which are divided into three phases. These three phases together are listed under the heading of "general reaction." The first phase of such general reaction will as a rule commence within 12 to 24 hours after injection and last from 24 to 48 and even 72 hours. It is composed of slight increase of temperature, drop of blood pressure, loss in weight, malaise, exhaustion, drowsiness during the day, and insomnia often at night. This initial stage is followed by a period of well being, otherwise known as the "euphoric phase." The well being phase may last 24 to 48 hours or 72 hours and consists of a relative feeling of general well being as well as increased comfort and relative freedom of motion in the joints. Often the patients feel that the reaction of the vaccine, if the euphoric phase is a criterion of same, is wonderful, and will be completely sold on this type of vaccine treatment. But this well being stage will quickly be succeeded by the third phase of the general reaction. This consists of symptoms of nervousness, irritability, depression, loss of appetite, nausea, low blood pressure and marked and definite aggravation of joint symptoms; such as, swelling, stiffness and pain. The third phase of the general reaction, may last three or more days. You can well see then, that when a patient goes through the series of stages that constitute a general reaction that he may be in the grip of such disturbance for a period of at least seven days and often as long as ten days to fourteen days. It has been our observation that it is unsafe, or at least not best,

for the patient's welfare to give additional injections of vaccine while the patient is still experiencing the symptoms of a general reaction.

Our usual method is to give an injection of vaccine once per week, but, where we note that the patient is experiencing a general reaction, we usually have them defer the next injection of vaccine for an additional week, making an interval of two weeks between vaccine injections. In general, physicians feel that it is best to stir the patient up in order to get good effects from biologic therapy. We, on the contrary, find that patients who have experienced a general reaction are definitely made worse as the result of same. It is therefore our constant endeavor to avoid the sinking reaction or general reaction at all possible cost. Again, when we notice a general reaction in our cases, we reduce the dose usually as much as one one-hundredth. In order to set forth the various reactions, let us say that we will simply reduce the dose which caused a general reaction in the patient by one-tenth. As the result of such additional moderate reduction in the vaccine dose, we obtain what is clinically diagnosed as a "focal reaction." The focal reaction may of course be mild, moderate, or severe in degree. It usually appears within a few hours to not longer than a day after injection. I have seen it take place within thirty minutes to an hour after the vaccine injection. It consists of an activation of the disease process in the joints causing thereby demonstrable increase of swelling, stiffness, or of subacute inflammatory reaction. There will be activation of the subjective joint symptoms, such as pain, stiffness, discomfort, etc., about affected joints. In addition, parts of the body that have not been troubling them are often stirred into activity, and they will experience, in different parts of their body, muscle spasm or nerve pain, which will fall under the general diagnostic term of myalgia or neuralgia. For quite a while, it was our object to secure in these cases a mild focal reaction, which would last only a very short while, probably a day or two, and which would not be very uncomfortable to the patient and which would then, of course, be succeeded by a period of increased comfort and relief from the rheumatic symptoms. However, the progress of the patient on such vaccine therapy, while satisfactory, was not quite as desirable as we wished it to be.

We made further research into the reaction of these patients and observed what the possible reaction might be to still further reduction of vaccine doses in these cases. As the result of such manipulation of amounts of vaccine injections, another type of response became apparent, which I believe could probably be labeled the "improvement reaction." This improvement reaction is often startling in its quickness of appearance and feeling of comfort and of joy that it affords to these patients. In some cases, often where the first dose has been rather accidentally of such amount as to constitute an improvement reaction dose for the particular patient, a startling healing and freedom from joint or muscle symptoms has occurred. Such marked response is obtained more often in cases where a single rather large joint is involved or where there is an involvement of muscle tissue due to fibrositis.

When the dose of vaccine is of an amount that produces in the patient an improvement reaction, there will appear in such patient, as the result of the vaccine injection, within a few hours to not later than a day, a feeling of well being. They will notice a relief from pain and joint discomfort. Marked joint comfort develops. The joint stiffness will be definitely less. They will be able to move about with relative ease and comfort. This sense of well being causes them to be overjoyed because of the discomfort they had in moving about previously. There will be a reduction in the swelling of the affected joints. There will be a reduction in the tenderness of the affected joints. Their appetite improves and gain in weight ensues. They rest better at night. They do not take any medicine during the day for relief of pain. Their mental state improves very markedly.

This type of reaction in some cases, where the proper dosage has apparently been stumbled on at the first or second injection, borders almost on the miraculous and causes one to wonder whether all of this is due to vaccine injections or simply a coincidence. We have in our hands, however, the very same weapon, namely the vaccine which we can use in order to prove to ourselves and to our own complete satisfaction, no matter how critical we may be, that such reaction is not a coincidence but a definite result in response to a definite therapeutic agent. All we need to do is to simply, at the next



injection, increase the dose of vaccine as much as five times or as much as ten times and secure again a focal reaction and increase it still further and get a general reaction with all the various symptoms listed above under the vaccine reaction. Then we can again test the trueness of the improvement reaction as being the result of vaccine injection by again dropping down to that dose which formerly gave them an improvement reaction and again note the same type of response. What further proof do we require of the reality of these reactions to vaccine injections than this; and he, who will use vaccine with this knowledge in mind, can prove to himself as he tries case after case of arthritis the verity of these observations.

In order to get the best result of vaccine treatment, it is necessary to keep administering that dose which consistently causes improvement reaction. The time length of improvement after each administration will increase from three to four days to seven to ten days and even longer. No doubt, in your minds at this point there is curiosity as to what constitutes the number of organisms in these vaccine doses. In my experience, I have observed that some of these patients will react with a dose of vaccine containing 10,000 or less organisms. I have often had them react with a sinking spell reaction following a dose containing as little as five hundred or one hundred organisms. Often, I get focal reaction to vaccine injections in which the saline extract of one organism is present and I have carried many cases along, securing an improvement reaction to a dose of vaccine containing the saline extract of one or two organisms, and even as low as one one-hundredth of an organism.

In our work now, where before we began with a dose of vaccine containing as much as 100,000 to 500,000 organisms, we begin with a dose much below 1,000 and even as low as 10 organisms or less. It is important to remember that in rheumatic cases, when they are on vaccine treatment, and even though the dose may be extremely low, they may become sensitive to the vaccine and a marked reduction of the dose may be necessary. This happens even though the dose already being given is as low as 10 organisms, 1 organism or even less than 1 organism. It is important to remember, also, the fact that if a patient is not reacting well to vaccine injections that they should be carefully re-

examined in order to find out whether a silent, nondraining focus of infection has been overlooked originally. Often, on removal of such foci, they will take a new lease on life and begin to respond admirably to the vaccine therapy.

I, again must reiterate what I have stated in other articles on vaccine treatment of arthritis. That admonition is that vaccine is not our sole weapon in the management of arthritis. Good, common, literally speaking, horse sense medicine is necessary in each and every case. Such consists of elimination of foci of infection or their treatment if they cannot be eliminated, proper periods of rest during the day as well as at night, proper reduction in the nervous and physical output of the patient, dietary supervision, good elimination, tonics, correction of other disease states, such as endocrine disturbances, anemia, menopause disturbances, diabetes or other chronic diseases that may be present. The use of physical therapy properly applied is valuable in helping these patients over the rough spots.

In general, I use very little medication of a specific nature for the control of the rheumatic process. Salicylates are given for their analgesic effects. Iodine and arsenic are given for their alternative and tonic effects. A high vitamin, low carbohydrate diet is indicated in practically all cases.

He, who will treat a case of arthritis along these broad lines and add to it that most potent weapon now available to the hands of the average doctor; viz, vaccine therapy, will find that his results in the improvement and cure of rheumatic disease is much greater than when only the broad general medical management of a case alone is practiced.

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# A BRIEF REVIEW OF RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF PERNICIOUS ANAEMIA—REPORT OF AN UNUSUAL CASE\*

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A great tribute to the untiring efforts of research workers and clinicians in modern medicine was paid by the Metropolitan Life Insurance Company in this brief statement, "Since 1926, the mortality rates for pernicious anaemia among males and females have declined at every age group, where the death rate was of some significance prior to 1926." The magnitude of this statement can be appreciated when we consider that this deadly disease has been known to medical science for approximately ninety years and until 1926, had confounded the best medical minds of the world in their efforts to find any therapeutic means of protecting human lives from this instrumentality of death<sup>1 2 26</sup>.

Time will not permit a detailed report of the postmortem findings in pernicious anaemia, but in those unfortunate cases where the diagnosis is made on the postmortem table, the pathological findings are constant and characteristic of this disease. Furthermore, we, who are primarily interested in the preservation of life are more especially interested in the clinical rather than the postmortem diagnosis except in those cases in which the clinical picture is uncertain and the final decision can be reached only in the autopsy room<sup>3</sup>.

The disease, in the vast majority of cases, is one primarily of old age, rarely appearing below thirty years of age and usually appearing after the fifth decade. In this country, France and England it appears more frequently in men above fifty, but when seen in younger individuals it is more common in women, but in Germany, Scandinavia and Finland the disease seems to be more prevalent in women. The case reported at the end of this paper is unusual because the disease occurred in a nineteen year old boy.

The symptomatology of pernicious anaemia is quite characteristic and the early recognition of these symptoms by the at-

tending physician is of the utmost importance. The onset of the disease is so insidious that the average victim can scarcely set any definite time that he first noticed any change in his condition. In some cases the most marked subjective symptoms are the gradually increasing weakness, shortness of breath and palpitation on the slightest exertion. The pallor, which the observing clinician recognizes readily, is not usually noticed by the patient until some well wishing friend calls his attention to this phase of his condition. Objectively, the lips are pale, the sclerae are pearly white, the conjunctivae are pale and the mucous membranes of the mouth are frequently so pale that the line of demarcation between the gums and teeth is not decidedly perceptible. The marginal ulceration of the tongue and the glossitis are probably less common symptoms.

In my own experience, the gastrointestinal and neurological symptoms have been the chief complaints that focused the patients' attention on their condition. Because of the marked achylia, digestion is incomplete and consequently these patients frequently complain of alternating periods of diarrhea and constipation, with a feeling of uneasiness in the stomach following the ingestion of food. The neurological symptoms of tingling and numbness frequently escape the patient's notice until called to his attention by the physician during the course of taking a careful history of the case or unless they assume the proportions of a painful neuritis or even neuritic pains similar to those of tabetic crises or girdle pains. The tendency to hemorrhage is quite marked, giving rise to hemorrhage from the mucous membranes of the mouth, in the retinal blood vessels, menorrhagia, metrorrhagia and epistaxis. Nausea, vertigo and headaches are frequently encountered. These patients will also give a history of periods of remissions and exacerbations of the foregoing symptoms, which is strong evidence of an existing pernicious anaemia<sup>2 7</sup>.

On physical examination, the examiner is at once impressed by the more apparent than real excellent state of preservation of these patients who, are obviously very ill. This apparent preservation is due to the extensive fatty degeneration of the soft tissues. The pallor already mentioned, in the absence of any other complicating disease, is of a peculiar lemon yellow tint. The patellar reflex is frequently lost

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510 Medical Arts Bldg,



and areas of paresthesia and anaesthesia are common findings. It is not uncommon to find a systolic murmur at the base of the heart, which is not transmitted and is purely a functional or hemic murmur. Edema of the ankles is also a common finding and the patient will frequently call the examiner's attention to this symptom. The vibratory sense in the knees is diminished or absent.

The problem of differential diagnosis depends more on a careful history and laboratory findings. Pernicious anaemia, perhaps is one of the few diseases in which the laboratory findings assume greater importance in making a diagnosis than do the physical findings. A patient giving a history of periods of exacerbations and remissions of symptoms together with the subjective and objective symptoms already enumerated should make one strongly suspicious of pernicious anaemia and the laboratory findings offer the final link in the chain to arrive at a definite diagnosis. The blood picture is quite characteristic, the red blood cells are greatly reduced in number and show great variation in size and shape, as well as, abnormalities in appearance, such as, polychromatophilia and basophilic granules.

Hayem in 1876 reported a case<sup>10</sup> of pernicious anaemia in which the red cells numbered only 414,062 per cubic millimeter and a color index of 1.34. A peculiar characteristic of the blood is that the haemoglobin is not reduced in proportion to the number of erythrocytes which accounts for the color index being greater than one. On the face of these findings, it appears that the increase of haemoglobin per red cell, is a compensatory hypertrophy in the blood tissue to make up for the deficiency of cells. The cell volume, as determined with the hematocrit is greater than one and is a consistent finding in pernicious anaemia and is always equal to the color index. Macrocytosis, while always present in the blood findings of pernicious anaemia, is not absolutely diagnostic for the reason that it is also seen in other conditions involving damage to the blood as in Von Jaksch's pseudo leukemia of children, sprue, poisoning by certain coal tar derivatives, hemolytic jaundice and conditions which interfere with normal gastric secretion as in carcinoma of the stomach and gastric resection. A mean corpuscular haemoglobin greater than one is almost conclusive evidence of pernicious anaemia. A

suggestion here to our laboratory workers might not be amiss, namely, that when doing routine blood examination, those cases presenting a color index greater than one should warrant a more detailed study and report to the attending physician. Such cases should have, in addition to the usual examination, a volume index, mean corpuscular haemoglobin determination, a measurement of the cell volume, reticulocyte and thrombocyte count and a fractional gastric analysis. The reticulocyte count before and after treatment is begun offers a means of determining the response of the patient to treatment. In a like manner, we, as physicians should not pass over a color index greater than one, without requesting a gastric analysis. Haden and Wintrobe and others recently have<sup>10 16 27</sup> shown the value of more refined technic in blood examinations as a means of more accurately differentiating the various blood dyscrasias. Coincident with the red cell impoverishment there is a similar poverty of reticulocytes and thrombocytes, the latter probably accounting for the tendency to hemorrhage in such cases. Virchow at an early date called attention to the increase in megaloblasts in pernicious anaemia, and some investigators today accept the presence of megaloblasts in the peripheral blood stream as pathognomonic of pernicious anaemia. There is usually a leucopenia especially of those white blood elements arising from the bone marrow with an occasional slight increase in the eosinophiles. During the so-called blood crises there may be an abundance of normoblasts and in the very severe cases more immature cells, such as, myelocytes may be found in the peripheral circulation. However, their absence from the blood findings does not, necessarily rule out an existing pernicious anaemia. Having such a blood picture, and a gastric analysis, preferably one done fractionally completes the laboratory work necessary for a diagnosis. A greatly diminished or complete absence of hydrochloric acid with a blood picture as outlined above is conclusive evidence of pernicious anaemia. Some idea of the constancy of achlorhydria may be found in a recent report<sup>16</sup> in which Faber and Block in 1900, were able to collect 33 cases of pernicious anaemia in which gastric analyses were done and free hydrochloric acid was greatly diminished or absent in all. Evans reported no free acid in 111 cases, Panton none in 117 cases and Levine and Ladd none in all but one of 107

cases. Achlorhydria frequently exists for years before any evidence of anaemia occurs, thus it would be wise to watch our cases of simple gastric achylia or so-called cases of achylia gastrica nervosa for the development of pernicious anaemia in the final decades of life.

The urine frequently shows an albuminuria and is deeply colored with bile pigment and aside from this, little of value is to be obtained from the urinary findings unless there are other complications associated with pernicious anaemia.

Special diets intended to eradicate anaemia had their inception into medical literature as early as 1880 and have undergone many and sundry alterations covering every extreme imaginable. Likewise the therapeutic measures tried, found unavailing, and finally discarded would compare favorably with the number of drugs in an extensive treatise on materia medica. Sometime prior to 1920, Whipple & Robscheit-Robbins<sup>18</sup> began their studies of the effect of liver on blood regeneration in anaemic laboratory animals. The clinical application of their findings was only partially successful until Minot and Murphy in 1926, through their untiring efforts to establish the therapeutic value of liver, which is rich in nucleins and complete proteins, the exact chemical nature of which is still unknown. Their work marks an epoch in the progress of modern medicine, and is no less outstanding than that of Banting and Best in the discovery of insulin for diabetes, and our present knowledge of liver extract would seem to warrant the statement that its value is analagous to insulin, in that, its effectiveness is dependent upon its continued use indefinitely. These workers originally used a daily diet containing among other things, 120 to 240 grams of cooked calf's liver, unless an equal amount of lamb's kidneys were substituted occasionally. That patients afflicted with pernicious anaemia and the associated achylia are unable to synthesize the anti-anaemic factors present in the normal diet has been fairly conclusively shown by Castle and others of Harvard University<sup>19</sup>. These investigators found that beef muscle, when subjected to the action of normal human gastric juice, and introduced into the stomach of anaemic patients caused a marked response in the improvement of the blood picture. That hydrochloric acid was not solely responsible, was shown by the failure to get a similar response when beef

muscle was exposed to hydrochloric acid alone before introduction into the stomach of anaemic patients. Thus, showing the presence of an intrinsic factor within the normal gastric secretions and an extrinsic factor within the liver substance itself.

Because of the aversion patients soon developed to the daily ingestion of such large amounts of liver, investigators have been stimulated to attempt to isolate the anti-anaemic factor in liver, so that we now have large quantities of liver represented by a very small amount of substance in a vial, ampule or capsule. Cohn has succeeded in isolating several fractions, of which, his fraction G seems to meet with wider acceptance and greater effectiveness. It has been found also that feeding massive doses of liver extract<sup>20</sup> at widely separated intervals seems to be as effective as giving daily small doses. Experiments were also undertaken with digested liver<sup>21</sup>, but the results were disappointing, so far as increasing the effectiveness of liver therapy is concerned.

Liver extracts from cattle, horses, fish and other marine animals have been made but only those of mammalian origin are effective. Liver extracts intended for subcutaneous, intramuscular or intravenous use are now commercially available and are especially valuable where a rapid response is of paramount importance<sup>22-24</sup>. Kidney substance seems to be equally as effective as liver, but the larger supply of liver makes it more desirable commercially.

Isaacs and Sturgis<sup>19</sup> of Ann Arbor, in 1930, demonstrated the value of fresh and dessicated hog stomach in treating pernicious anaemia. Conner of Rochester<sup>20</sup> a year later was able to corroborate the findings of these investigators. The response with fresh or dessicated stomach tissue was practically the same. Dessication has the advantage of acting as a preservative, thus, making this product available to those physicians in communities where abattoirs do not exist. In communities where such establishments are in operation the cost of treatment is practically nothing. I have used fresh hog stomach in two cases, where the material was supplied by our local packing plant. When advantage is taken of such facilities, it is well to have another member of the family obtain the material and prepare it for the patient's consumption, without the patient seeing what is being included in his



diet and when so given, it may be disguised with gelatins, cereals, etc.

A very potent preparation, having smaller bulk and available in capsules, has been recently developed which is a mixture of Cohn's fraction G of liver and gastric mucosa. In my own experience this has been most effective therapeutically and it is much easier to get the complete cooperation of the patient in continuing the treatment. It also has the added advantage of being slightly less expensive to the patient. The parenteral administration of liver extract is as effective as the oral route and is the method of choice in cases having marked and precocious gastro intestinal symptoms<sup>24 21 17 15</sup>. Transfusion still remains the mainstay on which to rely in those patients, who are moribund or so nearly moribund that death seems imminent before any therapeutic measures might have time to be effective, and its timely use may be the means of prolonging a life indefinitely, if some of the forms of therapy previously mentioned are begun immediately following the transfusion.

Langston of Oklahoma City, 1931<sup>12</sup>, reported an interesting case of pernicious anaemia in which he obtained an apparent cure with large doses of dilute hydrochloric acid. It would seem that in the face of the existing achlorhydria so constantly present in pernicious anaemia, that the inclusion of dilute hydrochloric acid in the therapeutic regimen, along with liver is rational and physiological, in spite of the statements to the effect that it is unnecessary<sup>8</sup>. Granting that it is not essential, the patient will be most grateful, since, his relief from gastric uneasiness and constipation is almost immediate. A reminder about the use of hydrochloric acid is in order here. We must recall that calcium phosphate is the basic substance of tooth enamel and is soluble in hydrochloric acid. Consequently, when administering this acid to a patient he should be instructed to dilute it well with water and sip it through a glass straw inserted well into the back of the mouth. To be most effective the acid should be given in full doses of one-half to one teaspoonful taken along with the meal and repeated one-half to one hour after meals.

After the patient's blood count and general condition have practically approached normal, the determination of the maintenance dose of liver extract is the final problem remaining for the attending

physician to solve, since the massive doses necessary at the beginning of treatment are not only superfluous later on but expensive to the patient.

#### CASE REPORT

Mr. C. S., single, age 19, white, occupation—elevator operator. Appeared in my office December 9, 1932, complaining of "constipation and weak stomach." Began about three months prior to the above date when he noticed necessity for purgatives or laxatives almost daily. During this time he also noticed that moderate exercise caused fatigue which became progressively worse. The past history is essentially negative except that the patient stated that in 1930, during the course of an insurance examination the examining physician informed him that he had a heart murmur but that it was not a dangerous murmur and passed him for life insurance. Family history essentially negative except for carcinoma of the stomach in his maternal grandmother and aunt. History of headache and nose-bleed negative. Patient states that his appetite is poor, bowels constipated, stools dark green to brown, half liquid and small solid lumps. Ingestion of food negative for pain. Nausea and vomiting marked when bilious or constipated. Loss of weight about twenty pounds within the last year. Dyspnoea and palpitation marked on moderate exertion. Edema negative. The following day the patient appeared for physical examination and collapsed in my office. Height 72½", temperature 98.0, pulse 72, respiration 16, blood pressure 96-48, weight 123 pounds.

Only the significant laboratory findings will be reported. December 7, 1932, red blood cells 2,250,000, hemoglobin 55%, color index 1.2, the laboratory failed to report the hemoglobin in grams or the reticulocyte count. Urinalysis was negative except for 30 mgms. of albumen per 100 c.c., trace of bile and a few bile stain cells. Wassermann and Kahn tests were negative. White cells show some degeneration, red cells pale, many macrocytes and microcytes—few show basophilic granules. Many poikilocytes. Occasional normoblast.

Gastric analysis shows total acidity 7 degrees, free HCl—none, lactic acid—none. Stool examination shows absence of intestinal parasites and ova.

December 17, 1932, weight 133 lbs., December 23, weight 139½ lbs., Decem-

ber 28, red blood cells 3,400,000, hemoglobin 75% or 12.75 grs. 100 c.c., color index 1.1. January 1, 1933, weight 143½ lbs., January 25, weight 152 lbs., red blood cells 3,800,000, hemoglobin 82% or 13.94 grs., 100 c.c., color index 1.08. March 8, weight 159 lbs., red blood cells 4,500,000, hemoglobin 76%. April 4, weight 158 lbs., red blood cells 4,500,000, hemoglobin 85% or 14.15 grs. 100 c.c., color index .94. May 5, weight 158 lbs., red blood cells 5,000,000, hemoglobin 85% or 14.85 grs. 100 c.c. color index .85.

Therapy—500 c.c. whole blood given December 11, 1932. Patient has been receiving nine to twelve capsules of extralin and HCl during and after meals.

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#### DIPHTHERIA CONTROL IN CHICAGO

Herman N. Bundesen, William I. Fishbein and  
H. C. Niblack, Chicago (Journal A. M. A., April  
8, 1933), state that the diphtheria mortality in  
Chicago has been materially reduced by having  
nurses call on the parents of every child up to 8  
years of age, urging that the child be taken to  
the family physician for diphtheria immuniza-  
tion and obtaining signed cards asking that the  
children be immunized. The maintenance of an  
up-to-date addressograph list of all the younger  
children up to 8 years of age in a community is  
most important in carrying out many public  
health programs. It has been of extreme value  
in Chicago's diphtheria prevention campaign. As  
soon as the child reaches the age of 6 month, a  
personal call is made on the mother; by continu-  
ing this routine it is likely that the diphtheria  
immunization will be brought to even a higher  
level and the mortality and morbidity to lower  
levels than have already been attained. With  
the alum toxoid, a far lesser number of reactions  
occur in the children; there is a more rapid pro-  
duction of immunity, and a greater percentage  
of the children become immune with two inocu-  
lations. In the light of present knowledge, it  
seems to be the most efficient immunizing agent  
against diphtheria. In all communities in which  
there are a large number of foreign-born people,  
especially those of the Slavic races, the aid of the  
Catholic church proves invaluable in promoting  
public health work. Some of the individuals of  
these races, who, perhaps, have suffered from  
persecution of various types in foreign countries  
in years past, tend to resent any interference  
with what they consider personal liberty. The  
church aids materially in overcoming this re-  
sentment and has been one of the greatest single  
factors in making this campaign successful. The  
distribution of literature urging diphtheria im-  
munization in itself will not bring about protec-  
tion of a large proportion of the childhood popu-  
lation. Such literature is, however, of great value  
in paving the way for the visits of the nurses.  
The cooperation of organized medicine is essen-  
tial in the successful conduct of any public health  
campaign.



# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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McAlester, Oklahoma.

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 810 Manhattan Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### HOSPITAL AND N.R.A.

The editor has been advised, but not officially, that hospitals do not come under the National Recovery Act. This seems to be a sensible situation for many of the smaller hospitals have had to close on account of the depression, inability to collect bills, general losses and lack of patronage. Of course, the high class hospitals that employ, for private cases, nurses who charge rather high fees, are not affected by reason of the fact that their relatively high income places them beyond the pale of the law, while on the other hand the student nurses, naturally, are paid so little that a hospital could not maintain itself

and pay the minimum required by the National Recovery Act.

This is written for the benefit of many questioners who write the Journal for information. It is suggested, however, that those wishing accurate and official information write the National Rehabilitation Association, Washington, D. C., if there is any doubt in their minds about the matter. However, it seems utterly impossible from the financial standpoint to pay probationers the sum of \$17.00 weekly, plus board, laundry and other expenses which hospitals would be compelled to do if called upon to comply with the regulations.

#### “FOREIGN DUMPING”

The New England Journal of Medicine is very much concerned over “foreign dumping in Massachusetts.”\*

We have previously, and on two occasions, had up the question of the “dumping” of foreign made goods, which were presumably made under the non-American system, that is, made by orders of dictators like Stalin, Mussolini, and their ilk. The American working man objects to this system, and now we have the same objection arising from professional medical men. It was noted in the Journal of the American Medical Association sometime ago that there were more than 1500 American medical students studying abroad and upon the theory that the curriculum was, as a rule, low grade, cheap, and far below American standards. Heretofore there has been a delusion in the minds of American medical men that superior medical education was to be obtained in European centers, but study of the situation does not bear this out. As a matter of fact they are simply out for the money, and due to their unusual state of depression are going to get the money regardless of the means.

It is said that, due to high American standards now prevailing, many matriculants for scholarship in American schools are unable to enter our own, and therefore are forced to attend foreign schools. It is also to be noted that the demand in the United States for medical education is far beyond the normal supply. The result of this situation is that the student is either hurried through, under low grade surroundings, or deliberately given for-

\*Editorial, New England Journal of Medicine, page 706, March 10, 1933).

eign diplomas, in order that he may enter and compete with American medical students, in the practice of medicine in the United States. A phase of it, not generally appreciated in the United States, is that the pre-medical requirements for the American medical students are rather severe, but they must be complied with. It is said that in many European schools there are no such pre-medical requirements, in other words, the student is largely like he was fifty years ago; he studies under some kind of a "rat," has irregular hours, and studies largely as he pleases. We all understand and appreciate the supposed glamour surrounding foreign medical education, but the New England Journal rightly points out that the pre-medical, medical, as well as postgraduate service today is far superior, as a rule, to that furnished by the European schools. So that in the end the student going abroad returns home largely unqualified as compared with his American brother.

One partial cure of the evil, is proposing that in every instance, the student who has gone abroad and secured his degree, be required to show beyond question of a doubt that first he has had proper pre-medical preparation, and that that has been followed up by proper postgraduate work. We certainly do not wish to be made the "dumping" ground for foreign medical mills. There should be a uniform system throughout the United States, the system should be high grade and of such character that it is second to none. For more than three years the faculty of one medical school has sought to improve and raise the grade of medical education, and certainly this is no time for retrogression.

Due to rapid transit, automobiles and flying transporation, the doctor is now able to get over the country much more rapidly than formerly. Twenty-five or thirty years ago he was largely dependent upon the trolley or horse and buggy—sometimes in the larger centers he had the advantage of either rapid bus or elevated transportation. Now all of this has been set aside by the automobile. It is nothing uncommon to hear of a man driving several hundred miles by airplane in order to make a hurried call, consultation, or operation, as the case may be. Naturally this has lessened the demands for the number of doctors, but by no means should be allowed to lessen the quality of the doctor.

## "A BULL"—FILES ARE DANGEROUS THINGS

Inadvertently we left out the discussion on the following papers, in the August issue: "Significance of Glycosuria," by George L. Driver, Ponca City; "Diabetes in Childhood," by Lea A. Riely, Oklahoma City; "Diabetes Mellitus And Its Relation To Vascular Disease," by Homer Ruprecht, Tulsa.

These errors arose from two reasons: The reporter clipped all her reports under one heading, therefore it was easily overlooked; then too, it was placed in a folder, always a dangerous thing where many papers are concerned.

We regret this very much—such things rarely occur, but despite every care they occasionally slip by our notice.

## DR. G. FOWLER BORDER—A BIOGRAPHY

Dr. G. Fowler Border was born at San Augustine, Texas, on December 22, 1876, the son of Captain G. F. Border and Elizabeth A. Border, nee Brooks.

Dr. Border's father served as an officer in both the Mexican and Civil wars, being an intimate friend of General Sam Houston. Dr. Border is also a nephew of ex-Governor O. M. Roberts of Texas.

Captain G. F. Border died when doctor Border was only ten years of age, and upon his young shoulders fell the responsibility of managing his mother's farm, which he did while continuing to attend school, graduating at Patroon College (Texas), at the age of sixteen years. Immediately after graduating he left for Louisville, where he entered the old L. M. C., remaining there for two years. During this time he paid his own expenses by serving as a drug clerk in Louisville City Hospital and as a preceptor in the medical college.

After completing two years in the Louisville Medical College, he came to the Indian Territory, procuring a certificate to practice medicine, locating near Ardmore, where he served as surgeon to a railroad construction camp. After a few months of practice here, he went to Texas and practiced for eight months, returning to Tulsa and forming a partnership with the late Dr. C. L. Reeder. In the fall of



1898, he entered the St. Louis College of Physicians, graduating in 1900.

Upon receipt of his degree he returned to Oklahoma, locating at Mangum, where he founded the first hospital between Oklahoma City and Amarillo, Texas. He immediately developed a large surgical practice coming from all over western Oklahoma and the Panhandle of Texas. As his practice continued to grow, new and larger hospitals were built to take the place of the out-grown ones until today the magnificent Border-McGregor hospital would gracefully do credit to any city in the state

All of Dr. Border's surgery has not, however, been done between hospital walls with modern equipment. He has performed dozens of major operations in prairie dugouts, where it was impossible to get the patient fifty or seventy-five miles to the hospital. He has also operated in cow camps under a stretched wagon sheet, with the cow hands shooing flies from the operative field with broom weeds. He has had teams drowned and buggies swept beneath him in swollen streams in his efforts to reach patients who needed his services.

Dr. Border first went to Europe for post-graduate work in 1904. Making his last pilgrimage to the clinics of Paris, London, Edinburgh and Glasgow in 1925. He has also visited once or twice a year the Mayo Clinic for the past thirty years.

He was unanimously elected chief surgeon of the Snyder Cyclone Relief Commission in 1904, and spent two weeks there operating day and night until the victims of that destructive tornado were all properly cared for, and today one of the doctor's proudest possessions is a diamond studded gold medal presented to him by the citizens of that stricken community.

Dr. Border has always been a community leader and town builder, having been honored by the citizens of his home town by being continuously elected mayor for eighteen consecutive years. He was also the first city official of the state to be awarded "the gold medal of distinction" by the Oklahoma Municipal League.

In recent years Dr. Border has been de-

voting most of his professional time to the study and surgery of the thyroid gland and has built up an extensive practice in goitre work.

Dr. Border comes from an old and distinguished Texas family and is a kinsman of many prominent men who have become famous in Texas politics. These include, General C. S. Brooks, his grandfather, ex-Governor Roberts, an uncle; Congressman M. L. Brooks, a first cousin; Judge John H. Brooks of Beaumont, a first cousin; Senator George C. Greer of Dallas, a vice-president and general attorney of the Magnolia Oil Company, a first cousin, and many other distinguished Texans.

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### *Editorial Notes—Personal and General*

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DR. THOMAS M. BERRY, Supply, visited in San Saba and Wayland, Texas, in August.

DR. ROSS D. LONG, Oklahoma City, attended Medical Officers' Training Corps, at Ft. Riley, in August.

DR. V. V. BUTLER, Picher, who has been confined to his home for several days on account of a scalded foot, has returned to his office.

DR. O. E. TEMPLIN, Alva, attended the annual meeting of the National Association of Railway Surgeons at Chicago, August 10th to 13th.

DR. AND MRS. FRED C. REWERTS, Bartlesville, will spend the next four months in Europe, where Dr. Rewerts will take postgraduate work in Vienna.

DR. CAROLINE BASSMAN, Claremore, who was injured from a fall, on the icy pavement last winter, has undergone an operation, from which she is recovering nicely.

DR. AND MRS. H. B. AMES, Alva, made an extended tour of Canada and eastern states the latter part of August. They also spent a few days at the Century of Progress.

DR. KEILLER HAYNIE, Durant, son of Dr. John Haynie, graduated from the University School of Medicine in June, 1933. He is now serving his internship in the University Hospital, Oklahoma City.

OKMULGEE-OKFUSKEE COUNTY MEDICAL SOCIETIES met September 11th, at the Parkinson Hotel. After a buffet lunch a program, "movies" of "Breech Presentation" and "Eclampsia" were shown. Dr. E. P. Allen, Oklahoma City spoke to those present.

WESTERN OKLAHOMA MEDICAL SOCIETY met at Dr. McLain Rogers' Hospital, Clinton, September 19th. The following subjects were discussed: "Transurethral Prostatic Research," J. B. Reagan, Wichita Falls, Texas; "Acute Suppurative Otitis Media and Its Complications," E. A. Abernethy, Altus; "Angina Pectoris," A. B. Chase, Oklahoma City; Dr. W. M. Taylor, Oklahoma City, subject not announced.

DR. HORACE REED, Medical Advisor, has been informed by the Medical Director of the American Telephone and Telegraph Company that they have on hand a number of the most recent models of the artificial larynx made by the Western Electric Company. Anyone who is in need of this particular type of aid, and whose finances prohibit the purchase of such instruments, please get in touch with Dr. Reed, 1300 Telephone Building, Oklahoma City.

THE WOMAN'S AUXILIARY TO THE OKLAHOMA STATE MEDICAL ASSOCIATION have elected the following new officers: President, Mrs. A. W. Roth, Tulsa; President-Elect, Mrs. J. E. Hughes, Shawnee; Vice-President, Mrs. Ben H. Cooley, Norman; Treasurer, Mrs. Marvin D. Henley, Tulsa; Recording Secretary, Mrs. I. N. Tucker, Tulsa. The following members of Standing Committees have also been elected: "Public Relations," Mrs. C. C. Hoke, Tulsa; "Hygeia," Mrs. Joseph Kelso, Oklahoma City; "Press and Publicity," Mrs. Thomas H. Davis, Tulsa; "Historian," Mrs. Winnie Sanger, Oklahoma City; "Student Loan," Mrs. J. M. Byrum, Shawnee; "Organization," Mrs. H. L. Wright, Shawnee; "Parliamentarian," Mrs. J. C. Woods, Tulsa; "Printing," Mrs. J. F. Gorrell, Tulsa.

#### ENCEPHALITIS IN ST. LOUIS

J. P. Leake, Washington, D. C. (Journal A. M. A., Sept. 16, 1933), states that during the five weeks from August 7 to September 10, inclusive, there have been reported in St. Louis City and St. Louis County 656 cases of encephalitis. It appears that the epidemic incidence for this area will not exceed at a rate of about one case per thousand of population, and the reported extension of the infection to other places has thus far been remarkably slight. The case fatality rate will be about 20 per cent. Only 13 per cent of the cases have occurred among the 25 per cent of the population which is under 15 years of age, and 23 per cent of the patients have been in the age group from 15 to 34 years, which comprises 35 per cent of the total population. The recovery rate in these two age groups has been relatively high, with about half as many deaths in proportion to the number of cases as in the other two age groups. Of the cases 29 per cent have been among the 27 per cent of the population that is from 35 to 54 years old. The age group over 55, comprising only 13 per cent of the population, has had 35 per cent of the cases, and the case fatality in this oldest age group has been about double the rate for the other age groups. There appears to be no racial or sexual predilection save the usual preponderance of males in the age group under 15. Clinically, this outbreak has resembled other epidemics of encephalitis, but especially that described as occurring around the Inland Sea of Japan in 1924.

#### TREATMENT OF CHRONIC INFECTION OF THE PELVIS: CONSIDERATION OF THE ELLIOTT METHOD

Virgil S. Counseller, Rochester, Minn. (Journal A. M. A., Sept. 16, 1933), takes into consideration the surgical and nonsurgical treatment of chronic infections of the pelvis by prolonged heat in the vagina, as applied in Elliott's technic in addition to the surgical procedures in delayed cases. He discusses the advantages of this technic postoperatively in reducing morbidity in cases in which operation is necessary. In 500 cases of acute and chronic inflammation of the pelvis in which the Elliott method of treatment was used by Holden and Gurnee, excellent results were reported. In some cases, treatments were given as a preoperative preparatory measure but after a few treatments the lesions disappeared and operation was not necessary. The author reports on a series of forty-three patients. He concludes that a high percentage of chronic infections of the pelvis can be cured clinically by the prolonged and sustained application of heat to the vagina, the Elliott technic being used. It is apparent, however, that there is a fairly constant small percentage of cases of chronic infections of the pelvis in which operation will be required. Complications are often caused by lesions of other pelvic structures and intestines. Satisfactory results following operations in this group are best obtained by the use of the Elliott technic, usually beginning on the fifth day. The Elliott principle of applying prolonged vaginal heat as a postoperative measure stimulates rapid absorption of the exudate, shortens the convalescence, reduces the morbidity and thereby contributes much of a successful surgical result. Satisfactory results were obtained in 100 per cent of the cases, and the time required in the hospital was less than two weeks.

#### PRESENT STATUS OF VITAMIN B<sup>2</sup> (G)

According to Barnett Sure, Fayetteville, Ark. (Journal A. M. A., July 2, 1932), during the last few years it has been definitely established that the dietary factor which McCollum and Kennedy in 1916 termed water soluble B, generally recognized as a growth-promoting and appetite stimulating substance, is a mixture of vitamin B or vitamin B<sup>1</sup> and G or B<sup>2</sup>. One of these is relatively thermolabile and has antineuritic and growth-promoting properties; the other is more stable after heating under pressure and also possesses growth-promoting properties and functions in the prevention and cure of pellagra-like symptoms in the rat. The former is also referred to as the antiberiberi, and the latter as the antipellagric vitamin. The nomenclature of these two dietary essentials has not yet been finally settled. The American biochemists have adopted the letter B for the antiberiberi factor and the term G for the anti-dermatitis vitamin. The author employs the term B<sup>2</sup>, tentatively adopted by the biochemists of England, to represent the antipellagric vitamin. He reviews the literature on this vitamin from the standpoint of its physical and chemical properties (thermostability, fractionation and concentration and reaction with nitrous acid), and its relation to nutrition (quantitative biologic method of determination, distribution of vitamin B<sup>2</sup> in food materials, vitamin B<sup>2</sup> and anorexia, vitamin B<sup>2</sup> and lactation, and the influence of vitamin B<sup>2</sup> deficiency on pathologic changes in blood and tissue).





DR. CLAUDE ALLEN THOMPSON  
Secretary-Treasurer-Editor  
OKLAHOMA STATE MEDICAL ASSOCIATION  
Died October 2, 1933

## DR. CLAUDE ALLEN THOMPSON

Dr. Claude Allen Thompson, aged fifty-eight, died as the result of a self-inflicted gun-shot wound, at Muskogee, Oklahoma, on October, 2, 1933.

Dr. Thompson was born at Homer, Angelina County, Georgia, on November 22, 1874 and came to Tahlequah, Indian Territory, on December 18, 1882. He was educated in the common schools of the Cherokee Nation, attended Southern Medical College in 1896 and 1897 and the Kansas City Medical College in 1897 and 1898. He then missed a year on account of the Spanish American war, during which he was a second-lieutenant of infantry. Following the war he returned to medical college and graduated from the Kansas City Medical College on March 16, 1900. Following graduation he practiced for one year at Okmulgee, Oklahoma, then came to Muskogee, where he has lived since. He was associated in the practice of medicine at various times with Dr. M. K. Thompson, Dr. J. L. Blake-more, Dr. F. B. Fite and Dr. Sessler Hoss. He was local surgeon of the M. K. & T. Railroad for twenty-five years, was health officer of Muskogee County during the administration of Governors Cruce and Williams, and was for a time in the public health service in carrying on their work in Oklahoma. During the World war he served as a major of the medical corps and was in charge of forming the various boards of the selective draft over the state. On August 14, 1924, he was appointed as chief of the surgical service of U. S. Veterans Hospital No. 90 at Muskogee by Col. Hugh Scott and served in that place for a little over eight years. Following this he was then transferred to a like position at the Veterans Hospital in Kansas City over his strenuous objection that he did not wish to leave the state of Oklahoma, and resigned on that account from the Bureau on December 15, 1930, and returned to Muskogee, resuming his work as a private practitioner.

Dr. Thompson was best known as the Secretary-Treasurer-Editor of the Oklahoma State Medical Association, in which capacity he served from May of 1909, until the time of his death, being the oldest in point of service of any man in such position in the United States. In that position he developed the State Medical Journal which is second to none in the country. He was an omnivorous reader, his editorials were always brief and to the point, and characteristic of the man. He never dodged an issue, was always outspoken, almost to the point of bluntness at times, but underneath it all he was a very sympathetic individual, never purposely unjust and a tenacious friend. Hypocrisy was not a part of his make-up and he hated it in anyone. He never equivocated. Anything undertaken was followed through with an astounding amount of vigor. He lived a dynamic life, was his own worst enemy, and died a dynamic death.



ORATION AT THE FUNERAL OF DR.  
CLAUDE A. THOMPSON  
OCTOBER 4, 1933

LEROY LONG

My friends, we come here today to honor the memory of our departed friend and brother. We come to mourn with each other and to weep—to weep shamelessly because our hearts are broken.

Claude Thompson was a man of integrity. None dare say to the contrary. He lived in this community nearly all his life. Year upon year he was under the observation of those who had known him for a long time. They looked at him and they said, "He is the same Claude." They looked again and they heard him speak, and they said, "Claude has his eccentricities, but he is a square man."

This dear friend was an industrious man. Work for him was a means to an end. The end attained, the drudgery of the work was forgotten. If it meant denial of recreation he did not hesitate. If it meant sleepless nights and toil and tension, he thought only of the battle to be won. Never slave under lash of master bent himself to the task more than this man under the domination of a determined will to achieve. These statements are not empty superlatives—you have but to ask his intimate friends and associates who saw his relentless career with reckless disregard of ease and comfort and even of momentary respite from grinding responsibilities.

In his work, Claude Thompson had a profound sense of personal responsibility. Details that could have been delegated to others received his attention and his attention alone. A serious mistake, perhaps, but it was a mistake born of intellectual honesty. We mourn because his inability to continue his self-sacrificing career has led him to the grave, and yet we can but look with admiration upon the efforts that he made.

For twenty-four years Dr. Thompson served uninterruptedly as Secretary-Editor of Oklahoma State Medical Association. That long period of service, through normal times and turbulent times, is obvious and striking testimony of the confidence reposed in him by the medical profession of this state. And he did not

retain that position by a yielding and compromising attitude. On the contrary, both by spoken word and through the columns of the Journal of the Association, he made his position definitely known upon every question in which the medical profession was interested. He stood by his convictions regardless of opposition, and was a leader in clarifying the thoughts and sentiments and actions of his associates. Under his ceaseless care and able direction the Journal became the authoritative mouthpiece of the medical profession in this State and was looked upon by neighboring states as an example of what a sound and ethical medical journal ought to be.

Fair in his estimate of all men, this departed brother of ours zealously championed the high ideals of his profession. No man could see through ignorance and sham and hypocrisy more quickly than he and when he discovered a disposition to wantonly trample upon the principles he revered his resentments and warnings came like lightning's flashes. During his tenure as a responsible officer of the Medical Association there have been situations in this state that would have led to great wrong and humiliation had it not been for his virile pen, his quick decision and his uncompromising stand for what was right and honorable. He was loyal to his profession just as he was loyal to the principles of integrity and industry and intellectual efficiency.

Added to these qualities, he was loyal to patients under his care. Only three months ago Dr. Pat Fite told me in a conversation how Dr. Thompson, while a member of the staff of the soldiers hospital here, would make unusual visits at night and in other odd hours to personally ascertain the condition of his patients. This abiding interest in the welfare of sick people depending upon him is another example—and a most beautiful one—of what he conceived to be his duty to personally look after his work in tedious detail. It is an example that should stimulate the emulation of everyone who has upon his shoulders the sacred responsibilities of the doctor of medicine.

Dr. Thompson was loyal to his friends. His was an intense loyalty that could not be weakened by innuendo or covert statement. For him it was not enough to simply be a conventional friend. His friendship was a militant friendship that would not

let him take a neutral position when the honor and welfare of his friends were in even apparent jeopardy. No individual could get the ear of Claude Thompson if he did not speak openly and frankly and definitely. Yes, my friends, he was loyal to those who trusted him just as he was loyal to the profession he served.

Did this man have faults? Yes, he had faults, but, O, our Father, let those who have stones in their hands drop them upon the ground, for only Thou art perfect, only Thou knowest, only Thou understandest.

We are here today because we respect and love the memory of our friend and brother—we, who knew his faults; we who knew his integrity and industry; his efficiency and his loyalty. We are here

because we have measured him, and his stature for good reaches high above the sordid and mean. We have weighed him, and the balance is pressed down on the side of service to his day and generation. We are but poor and imperfect beings in the inscrutable universe of God, and yet our innate sense of justice covers up imperfections, and through our tears we see only the conflicts and victories of a fellow being. If so be it with us, how much more so must be the measureless and merciful justice of the omniscient Heavenly Father.

We must part now. Goodbye, my brother. Yet a little while and we, too, shall enter the realm of mystery. While we wait trust us—trust us, my brother, for we will keep your memory alive in the secret places of our hearts.

#### DOCTOR WILLIAM HARRINGTON

Dr. William Harrington, Depew, died at the University Hospital in Oklahoma City, after a short illness.

Dr. Harrington was born in Halifax, Vermont, May 10, 1875. He moved with his family to Depew from Mena, Arkansas, about nine years ago.

He is survived by his wife and son, and sister.

Interment was in Pine Crest Memorial Park, Depew.

#### DOCTOR JULIUS HENRY CAMERON

Dr. J. H. Cameron, pioneer physician of Healdton, died September 6th, following a stroke of apoplexy.

Dr. Cameron was born in Cannon, Texas, June 29, 1886. He received his education in the Cannon public schools, later attending the Louisville School of Medicine, Kentucky. The year of his graduation he began his practice of medicine at Matoy, Oklahoma, later practicing at Caney, Oklahoma, and in 1915 he came to Healdton, where he has been until his death.

He is survived by his wife and one daughter.

Funeral services were in charge of the Masonic Order, with interment in Hose Hill Cemetery, Ardmore.

pancreas, the explanation is not clear. Tentatively, the theory is advanced that the pituitary has been suppressed, since the estrogenic substance has been found to suppress the sex principle in the pituitary. If this interpretation is correct, it would indicate that the suppression is almost complete, since the glycosuria following pancreatectomy was within the range for completely hypophysectomized dogs. It might be dangerous to suppress the pituitary completely, since other organs atrophy following hypophysectomy. This is especially true of the suprarenal cortex, which atrophies if the pituitary is removed. Before attempting to treat clinical diabetes by pituitary suppression, it will be necessary to determine whether the influence on carbohydrate metabolism can be accomplished without injury to other organs. This work is now under way.

#### SIGNIFICANCE OF IODINE CONTENT OF HUMAN BLOOD

George M. Curtis, Chester B. Davis and Francis I. Phillips, Columbus, Ohio (Journal A. M. A., Sept., 16, 1933), observed that a relation exists between the activity of the thyroid and the metabolism of iodine which is undeniable. The content of human blood is thus a measure of thyroid function. Demonstrable changes in the level of the blood iodine accompany those diseases in which thyroid function is altered. The fluctuation of the blood iodine during the course of thyroid disease under management is significant. The blood iodine is increased in thyroid hyperfunction. It is lowered in thyroid hypofunction. It is always elevated by any form of iodine medication. It would seem that the level of the blood iodine is controlled by thyroid activity. There are corresponding changes in the urinary excretion of iodine. This increases in thyroid hyperfunction. It likewise is increased on any form of iodine medication. Simultaneous investigation of the basal metabolic rate, the level of the blood iodine and the urinary excretion of iodine reveals significant evidence of thyroid activity. The significance of the blood iodine in thyroid disease is similar to that of the blood sugar in diabetes mellitus and to that of the blood calcium in parathyroid disease.

#### IMPROVEMENT IN EXPERIMENTAL DIABETES FOLLOWING ADMINISTRATION OF AMNIOTIN

According to B. O. Barnes, J. F. Regan and W. O. Nelson, Chicago (Journal A. M. A., Sept. 16, 1933), although their experiments, on dogs, clearly show that amniotin will modify glycosuria after removal of the



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.  
Lain-Roland Clinic, M. A. Bldg, Okla. City

### The Problem of Psoriasis, Collected Report, Ars Medici, Volume XI, Number 7, July, 1933.

Prof. O. Grutz and Prof. M. Burger compiled this report, acknowledging primarily that the problem of psoriasis awaits solution. The main purpose of this report, however, reveals that there is possibly a metabolic disturbance, particularly a fat metabolism disturbance in psoriasis.

The authors point out that there is an abundance of fat in the skin, and especially in the superficial layers of the epidermis a great deal of cholesterol is found. "The epidermis which is constantly being desquamated and replaced, naturally needs a constant new supply of fat. It is known that the psoriasis scales have a specially high cholesterol content." In comparing 30 normal cases of healthy individuals with 21 psoriasis cases, it was found that there was a 42% average increase in the serum fat. A corresponding cholesterol difference was not noted. It was concluded that there is a fat metabolism discrepancy in psoriasis and if a more marked stage occurred xanthomatosis resulted.

Acting on these findings, the authors put cases on a fat-poor diet as well as cholesterol-free. Not more than 20 to 30 gm. fat daily were allowed. They observed that after three or four weeks the lesions come to a standstill. After the fortieth day involution rapidly occurs and the scales become detached. The skin is almost normal in favorable cases in three months, while stubborn ones require four to six months. No local treatment was used. This treatment is in no way permanent unless this diet is maintained, thereby indicating that we are still looking for a permanent cure.

### Carcinoma of the Lips—Surgical or Ray Treatment? R. Stewart-Harrison, X-Ray Institute and Surgical Univ. Clinic, Zurich. (Strahlenther., Volume 46, No. 3, 1933).

"Report on the results of treatment in 42 of the author's own cases with a survey of the modern literature. The author found that the ray treatment of the primary tumor resulted in freedom from symptoms for three years in 70 to 80% of cases, whereas the operative treatment produced this at best in 60% of cases. As regards the regional glands, he comes to the following conclusions: If the glands cannot be demonstrated clinically, the region may be regarded with a high degree of probability as non-carcinomatous. Small, not particularly compact glands may be due to inflammatory ulceration and are likewise not to be regarded as carcinomatous. In the case of large and compact glands, there is reason to suspect cancerous degeneration and their complete excision is indicated. If the primary tumor is small and regional glands are absent, a waiting, observant attitude

is in order. If the primary tumor is large or has been present for a long time, if small, probably banal glands are present, the patient should remain under observation; a prophylactic ray treatment may possibly be undertaken. Growth of the glands demands immediate complete excision. In the case of larger glands that are almost certainly of metastatic nature but are still operable, immediate excision, possibly after previous irradiation, is likewise indicated. If the histological findings are positive, postoperative irradiation is always necessary. Inoperable glands are treated with protracted fractional X-ray therapy. Glandular metastases than then become operable should be excised."

### Dermatitis Caused by Ethyl Gasoline. David W. Johnson, M.D., Archives of Dermatology and Syphilology. Volume 28, Number 2, August, 1933.

A case is reported of a male patient, aged 30, that experienced an eruption consisting of wheals 2 to 4 cm. in diameter and the intervening skin erythematous at various times when in contact with ethyl gasoline. This condition occurred only when his occupation caused him to contact this source of irritation. At one time, at least, there were constitutional symptoms as evidenced by joint pains, headache, chills and nausea, with slight rise in temperature.

The author showed by sensitization tests that the patient was negative to ordinary gasoline and other agents, but ethyl gasoline reacted in dilutions up to 1:500.

### The Reversal of the Blood Wassermann Reaction in Untreated Syphilis, Emil T. Hoverson, M.A., M.D., G. W. Morrow, M.D., and Roy O. Hawthorne, M.D., Kankakee, Illinois. The American Journal of Syphilis, July, 1933, Vol. XVII, No. 3.

This report covers 64 cases that were admitted to the State Hospital (for mental diseases). Wassermann and Kahn tests were found to be positive on all of these cases. Study of these patients caused a grouping viz:

"Group I.—This group comprises thirty-one patients who had positive Wassermann reactions on admission, who have received no antisyphilitic treatment, and who still have either three— or four-plus Wassermann and Kahn reactions.

"Group II.—This group comprises ten patients who originally had positive Wassermann reactions on admission, who had no treatment either before or after admission, and who now do not have strongly positive reactions even after provocative injections.

"Group III.—This group includes eighteen patients who had positive Wassermann reactions on admission, who have received no antisyphilitic treatment either before or after admission, and who now have negative occasions.

"Group IV.—This group includes five patients. The results are inconclusive and are not included in the body of this paper. Three patients have received inadequate treatment, one is now dead, and the fifth

patient's physical condition does not warrant the injection of a provocative dose."

Those patients listed in group III are the ones that are particularly significant, inasmuch as the authors suggest that "syphilitic infection may be overcome just as other infections are sometimes overcome." Of course, they do not infer that this holds in any great percentage of cases.

**Leukonychia Striata**, E. W. Netherton, M.D. *The Journal of the American Medical Association*, July 13, 1929, Vol. 93, page 116.

The editor of this column received a reprint of the above-named article and abstracts it now, even though considerable time has elapsed since the writing of the condition, because of the frequent questions arising as to the origin of various "white spots and lines" on the finger-nails.

Unna has classified leukonychia viz: (1) leukonychia punctata (spots); (2) leukonychia striata (bands), and (3) leukonychia totalis, involving the entire nail. Etiologically, it has been ascribed to malnutrition, febrile disease, trauma or any agency that disturbs the growth, development or keratinization of the matrix cells in their change into nail substance. Trauma is the most common.

The author presents two cases in subjects that were free from any physical defects except the leukonychia spots. In both instances he obtained a clear-cut history showing that the girls daily used an orange stick to push back the "cuticle," thereby inflicting trauma. Upon using a more gentle technic the white spots disappeared completely.

### EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
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**Malignant Disease of the Oro-Pharynx, Including the Fauces**. Norman Patterson, London. *The Journal of Laryngology and Otology*. Vol. XLVIII. No. VII, July, 1933.

This survey touches on facts which may throw light upon some of the more important points.

The exact location of the beginning of the carcinoma is difficult to determine unless seen before extensive development. It is thought that a tumor originating in the tongue and progressing to the tonsils responds more readily to surgical treatment than the reverse situation. Surgical removal is given small consideration if the growth occupies a central position or if it is near the epiglottis. When viewed as a fancied circle, the soft palate, the tonsils and base of the tongue, the higher the location of the malignancy in the circle, the more hope for a perfect cure. The possibility of a glandular metastases from the tonsil explaining the unknown etiology of tumors of the neck is suggested by the author. Biopsy and a Wassermann are valuable aids in differential diagnosis. The average age was 58 of the 50 cases reported in this series and the tonsil was involved in 70% of these. Patterson says: "I hold the view that if there is a good chance of completely removing the tumor without undue risk to the patient, endothermy excision should be carried out combined, in selected cases, with drastic surgical removal of the gland-bearing areas. Probably in the majority of cases irradiation should follow the operation." Encouraging re-

sults are being obtained at the Radiumhemmet in Stockholm and elsewhere.

**Early Ear, Nose and Throat Manifestations of Lethargic Encephalitis**. Dr. Arthur R. Zinkham. Washington, D.C. *The Laryngoscope* Vol. XLIII, No. VII, July, 1933.

Zinkham says: "the lesions may occur in the region of the vestibular nucleus, in the nerve itself, or in the nuclei connected to it by means of the medial longitudinal bundle. The globus pallidus, which is stated to have a direct connection with the vestibular nucleus, appears to be one of the most frequent sites for the lesion of epidemic encephalitis."

Under this category three cases are reported; one male, two females, white; ages 18, 24, and 36 respectively. In the beginning the chief complaint of each patient differed: dysphagia, pain over the frontal sinus, and pain over the mastoid region. Roentgen examination of the sinuses and the mastoid region were negative. Diplopia was a symptom in two of the three patients. Spinal puncture and palliative treatment resulted in the slow but complete recovery of all the patients.

A state of deep and prolonged unconsciousness, resembling profound slumber, from which the person can be aroused but into which he immediately relapses, is often a late and changeable symptom. An involuntary sidewise movement, a sensation, of irregular or whirling motion, either of oneself or of external objects, and loss of poise delineates the most frequent form. Sonitus may be complained of without impaired hearing. Vestibular, labyrinthine, and oculomotor abnormalities may be present. A typical case presents dizzy sensations without lethargy or diplopia. Duration of the infection is indefinite. It usually continues with increasing severity until medical aid is sought. There are no cases reported in the literature of paranasal sinus involvement in connection with acute lethargic encephalitis. Symptoms referable to the throat are failure of the retching reflex, quivering and spasticity of the lips and tongue musculature, single or double insufficiency of the palate and vocal cords, and difficulty in phonation.

The differential diagnosis must consider and rule out Meniere's disease, intracranial tumors, cerebral arteriosclerosis, cerebellar disease, and functional vertigo.

The most constant symptom is irritability of the patient, which is very noticeable to friends and close associates, but rarely to the individual himself. If by elimination no definite diagnosis can be made, or any pathology found to account for the signs and symptoms presented by the patient, then encephalitis must be considered.

**Benign Tumors of the Tonsil with Special Reference To Fibroma**. H. J. Hara, M.D., Los Angeles, Calif. *Archives of Otolaryngology*. Vol. XVIII. No. I, July, 1933.

Benign tumors of the tonsils are rare. The growths in this regions are papillomas, angiomas, lymphomas, adenomas, fibromas, lipomas, chondromas, teratomas, and various forms of mixed tumors. The development of the faucial tonsils occurs in the second bronchial cleft. From an embryologic standpoint the meeting place of the oral epiblast and the intestinal hypoblast is conducive to a neoplastic growth.

The first case was related in 1827 and the first complete monograph on this subject was published in 1897. Thirteen cases of true fibroma of the tonsils



had been reported up to the beginning of the present century with an additional thirteen following. In 1932 a report was given of sixty-three cases of benign tumors of the pharynx and tonsils under observation from 1917 to 1930. Of these thirty-five were papillomas, thirteen in the pharynx, eight in the palate, and only seven were of tonsillar origin. These included one lipoma, one chondroma, two lymphoid tumors, and three cysts. No fibromas were present and none have been revealed in a minute study of the late literature.

The tonsillar fibroma may be sessile or pedunculated, the latter being more common. The sessile type becomes noticable only when its increased size causes interference with normal action of the faucial muscles in deglutition and later in speaking, while the well developed pedunculated form because of its mobility, may be thrown forward on the tongue or swallowed. During sleep it may fall into the laryngeal orifice and interfere with breathing although there is no record of suffocation. A cough, salivation, nasal tone, mouth breathing, and snoring may be resultant. Many times there are no symptoms and the development is so insidious that the knowledge of its presence is found during examination for other reasons.

The size and shape of the tumors differ. They may be round, oval, or kidney bean shaped and are sometimes as small as a pea or as large as a turkey egg and may fill the entire oral cavity. Generally it is single and confined to one side. It is a pale pinkish rose color and its consistency is normally hard and wood-like.

Ages of these patients varied from seven and one-half years (this case report the youngest), to the seventieth year. True fibromas are found twice as often in males as in females.

When cut the parenchyma presents a milky white, partially transparent construction. Normally it is coated with a thin scale-like deposit, frequently becoming semi-opaque, while the deeper and central zones are made up of an unformed cluster of fibrous tissue which occasionally have a glassy appearance. Again, between the meshes of the fibrous tissue may be found small foci of cellular infiltrations with many connective tissue cells and fibroblasts. The fibroma is usually well vascularized, and recent hemorrhagic foci are frequently observed. In some cases the blood vessels and in others the lymphatic channels may be well marked, thus forming telangiectasia haemorrhagica or telangiectasia lymphatica.

Discernment of tonsillar tumors and those of the nasopharynx is easily made. A fibroma of the nasopharynx may become carcinomatous while one of the tonsil seldom if ever becomes malignant.

Surgical removal is the approved method of treatment. Approach is easily made by the oral route, except in instances of an unusually large growth, when dissection of the neck is necessary or a wider access is made through an incision in the cheek from the angle of the mouth. There is no record of operative or post-operative hemorrhage.

**A Case Report:** On October 10, 1932, a normal seven and a half year old Japanese girl was brought to me for examination after a tonsillectomy had been advised by the school nurse. On inspection it was thought she had a peritonsillar abscess but upon digital examination what was apparently a pointing of pus was a nodular projection from the mass, which was definitely indurated and well lobulated. Nothing unusual was noted in the nose, larynx, or ears. The temperature was normal and all tests negative. Two

weeks later she was operated under ether anaesthesia. The tumor was removed much after the usual technic of a tonsillectomy. Observation showed that the growth had originated from the fibrous layer of the tonsillar capsule and not from the pillars. The tumor with the tonsil weighed 17 gm. and was 50 mm. long and 20 mm. at the widest part. The left tonsil, removed at the same time, weighed only 4 gm.

**Solitary Neurofibroma of the Orbit.** MacMillan and Cone. Montreal, Canada. *Archives of Ophthalmology*. Vol. X, No. 1, July, 1933.

Only five cases of this condition were found reported in the literature. A youth, age 20, on examination showed 12 mm. proptosis in the right eye with Hertel's exophthalmometer. His chief complaint was impaired vision. The symptoms were first noticed in 1928; they increased during the following year and then remained quiescent for the two succeeding years. Vision in the left eye was normal and 1-180 in the affected eye. There was a hypermetropia of 7 D in the right eye and the nerve head was swollen 5 D. The physiologic cup was obliterated, the veins were wide, and the arteries normal. There were no hemorrhages present; no pulsation of the globe and no bruit. The visual field of the right eye was normal. The nasal sinuses were negative. The general examination was negative with the exception of fifteen small pigmented moles scattered over the body. All laboratory tests were negative.

At operation an encapsulated tumor 42 mm., long, 34 mm., wide, and weighing 23.17 gm., was removed. The eyeball was sacrificed since removal of the tumor was impossible otherwise. There was no point of attachment to the nerve trunks, muscles or bony wall. Sections were stained with Laidlaw's connective tissue stain, Hematoxylin and Eosin, Weigert—Pal's stain and Gros-Bielschowsky's stain. Microscopic examination showed fibroblastic tissue with occasional mucoid degeneration or myxomatous tissue. Cell arrangement in the opaque areas was regular. There was palisading and parallelism of oat-shaped nuclei. Medullated and non-medullated nerve fibres with varicosities at irregular intervals were demonstrated. Fat, iron, cysts, elastic fibres and phagocytic cells were absent. According to Penfield the presence of nerve fibres in the tumor growth is pathognomonic of neurofibromas. He does not consider them neoplasms in the strict sense of the word. They are an indication of Recklinghausen's disease, which is systemic. Penfield uses the term neurofibroma to describe encapsulated fibroblastic growths arising from nerves and permeated nerve fibres. The clinical significance of the classification is at once manifest when one recalls that the tumor is not a disease entity but a manifestation of a constitutional condition. Judging from past experience other tumors may be expected to develop.

**A Lateral Head-Low Position for Nasal and Sinus Treatment.** Sidney N. Parkinson, Oakland, Calif. *Archives Otolaryngology*, Vol. XVII, No. VI, June, 1933.

The fact is deplored that medical literature is not more specific regarding detailed treatment of nasal conditions, since these infections are among the most common seen by the rhinologist.

Instead of the nasal packs so universally used a method of treatment is outlined in which there is no instrumentation. The patient is seated on a couch or its equivalent with two or three pillows. He then

bends over laterally, keeping his shoulder always on the pillows and never letting it touch the couch until the cribriform plate is low and horizontal. A one per cent solution of ephedrine in warmed physiological sodium chloride is now placed in the nostril. Bacteriophage-lysed antigen solutions (sterile) are also used. It is claimed the patient is able to maintain this position longer and with less discomfort than the extension position with the head hanging down over the end of the couch. If the operator deems it advisable the displacement method may be used in this position to really put the medication in the sinuses. As the patient arises slowly from the treatment his face is turned downward to allow any excess medicine to run out of his nose. In this manner there is no strangling or unpleasant taste left in the mouth.

**Comments:** This method eliminates for the patient two of the disagreeable factors of nasal treatments, i. e., (a) traumatism to tender, swollen, and engorged tissues; (b) reaction to medication.

**Stereoscopic Exercises in Ametropia.** Joseph O. Pascal, Boston, Mass. *Archives of Ophthalmology*. Vol. IX, No. VI, June, 1933.

Another use is found for the stereoscope. All ophthalmologists are too familiar with the complaints registered by the patient who is wearing his corrected error of refraction for the first time or the one who has had quite a large change from his previous correction.

A simple hyperope uncorrected has developed a habit of forcing his accommodation ahead of his convergence, which serves his needs even though under strain. Corrected he has to inhibit his accommodation to the extent of the plus power of the correcting lens and increase his convergence stimulus.

A simple myope uncorrected learns to lessen or suppress accommodative stimuli while increasing convergence stimuli. With the correction on he has to learn to make full accommodative effort to a relatively small convergence effort.

A table for accommodation in diopters and for convergence in prism diopters is given. The object of the exercises are to break up the old ocular habits to which the patient has become accustomed before the refractive error was corrected and the correcting lens then produces equal and balanced stimulation between accommodation and convergence.

**Comment:** Pascal is recalled as the one who a few years ago evolved a formula for estimating the dioptric power of the eye. His most recent publication is entitled "The Ioskiascopy Test-Simplified." This method he outlines in this article should be an aid to that end, if the primary consideration is that of service to the patient.

## TUBERCULOSIS

Edited By

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**The Healing of Tuberculosis Cavities—A Clinical Study.** B. T. McMahon and Edmond H. Kerper, *American Journal of Medical Sciences*, August, 1933, P. 170-180.

Here is given a detailed report of the study of 296 cases with cavitation, with a view of bringing out such factors as are shown to influence the closure of

cavities. The prognostic significance of open cavities upon the subsequent course of the disease has long been recognized. The 296 cases were chosen from 800 studied, in that they fulfilled certain criteria which were set up to insure, as far as possible, against variable factors which might lead to erroneous conclusions.

In the literature there is a wide difference of opinion regarding the prognostic outlook for patients with cavities. In view of this fact, the cases studied were classified into four main groups so that conclusions might be somewhat qualified according to the variable conditions associated with the groups. In this way, a "blanket prognosis" in all cases of cavitation would no longer be justifiable. It would then follow that certain existing factors should be borne in mind in handling individual cases and also in contemplating their prognostic trend.

The grouping was as follows: 1. Spontaneous closure. 2. Much improved—marked shrinkage of cavity. 3. Slightly improved—some shrinking in cavity size. 4. Unimproved—Roentgen ray and pathologic anatomy substantially unchanged or worse, irrespective of clinical improvement.

The percentage of cases included in these groups are first quoted on the basis of bed rest alone, without the aid of artificial collapse in any form. In group 1, the number was 65 (22%). Group 2, 38 (13%), Group 3, 47 (15%). Group 4, 84 (28%). Sixty-two were given early collapse therapy without preliminary observation.

Of the 47 included in the "slightly improved" group, 23 were subsequently given collapse therapy in one form or another. Of this 23, 33% obtained closure. Fifty-seven of the 4th group originally classified as unimproved on bed rest alone, received collapse therapy. Of this number, 22% obtained closure. Of all who received collapse therapy in these groups, 24% obtained closure.

Of the 62 in the "early collapse" group, 37% obtained closure and an additional 6% by supplementary surgical procedures.

To summarize: 22% obtained closure spontaneously (with bed rest alone); 17% obtained closure as a result of different forms of collapse therapy. A total of 115 (39%) of the 296 cases eventually were classified as arrested disease.

Such factors as size of cavity, sex, age, patient, age of cavity, weight, gain or loss, etc., are also noted with regards to their influence on healing.

These conclusions are about as would be expected. The influencing factors as revealed by Roentgen-ray however, are interesting to note. The favorable results were, in most cases, dependent on the extent of the excavation. The smaller the cavities, the more prone to heal. Cavities located centrally were more favorable than those peripherally. The nature of the infiltration surrounding a cavity was shown to be an extremely important factor, the incidence of healing being greater in cavities surrounded by the least amount of infiltration. Cavities with thin walls were definitely more likely to heal spontaneously.

In commenting on the results of this study, the authors point out the necessity for individualization in the treatment of pulmonary tuberculosis with cavitation. Although the presence of cavity is recognized as constituting a serious menace, a preliminary period of observation on complete bed rest is advised before the institution of collapse therapy.

If it is apparent that spontaneous healing is taking place, the bed rest program should be continued



with frequent fluoroscopic and X-ray examinations. In the presence of unsatisfactory progress, collapse therapy is indicated.

**Roentgenologic Diagnosis of Early Pulmonary Tuberculosis.** B. R. Kirklin. *Annals of Internal Medicine*, September, 1933.

In this paper the author repeatedly lays great stress on the fact that in the diagnostic study of early pulmonary tuberculosis, the stereoscopic roentgen-ray films must go hand in hand with a thorough clinical and physical examination, and in some more doubtful cases, the latter study must be still further augmented by a period of observation for more thorough diagnostic conclusions. For, in the author's own words; "the two methods (X-ray and physical examination) are complimentary, mutually helpful, mutually corrective and almost indispensable to each other."

It is obvious that roentgen-rays cannot reveal evidences of tuberculosis until demonstrable differences in density of the tissues have been produced by the infection. It is upon density variations that interpretation rests.

Studies of the years past, with special reference to the correlation of X-ray and physical findings, have revealed two important facts; namely, that it is rare for tuberculosis to be present to the extent of producing symptoms without roentgenologic signs, while the converse occurs often enough to be common knowledge to every phthisiotherapist.

It may be said here that although there may be many with disease demonstrable roentgenologically who do not have the so-called classical symptoms of tuberculous toxemia, certain evidences of toxemia may be elicited by closer observation and questioning, thereby, making the group of apparently symptom-free patients considerably smaller than would first seem.

The author continues to briefly describe the two main types of lesions which constitute the early, incipient cases. First, there is the faint shadow in the upper lobe which appears stereoscopically as a dense conical region. In a flat plate this lesion appears fan-shaped, its base appearing at the periphery of the lung, often directed toward the axilla.

The second type of lesion commonly observed is a more or less spherical one, likewise located in the outer parenchymatous portion of the subclavicular region. These shadows may be single or multiple. The density is greatest in the center, while the periphery is hazy and indistinct.

In the interpretation of roentgen-ray film, there are four prime characteristics of early tuberculosis which must be borne in mind: (1) Its situation below the clavicle and in the outer parenchyma of an upper lobe; (2) The roughly conical or spherical form of the lesions; (3) The softness and lack of marginal definition of the shadows; and (4) The accentuation of the tributary bronchovascular stem supplying the area.

Few of the conditions which might be confusing diagnostically have all of the characteristics. Some simulants which are to be considered are: bronchiectasis, malignant metastasis, the lateral border of an azygos lobe, shadows from extraneous causes, accentuation of bronchovascular markings without corresponding parenchymal shadows, localized simple pneumonitis and small healed tuberculous lesions.

The author takes up these above mentioned conditions and treats them individually from a differential diagnostic viewpoint, roentgenologically only. How-

ever, suffice it to say in this brief abstract that the basis of a differential study rests mainly on the presence or absence of the four cardinal characteristics of early pulmonary tuberculosis, together with a careful and correlative clinical study.

Brief mention is made also of differentiating between arrested and active tuberculous lesions.

In summarizing, the author makes a strong appeal for routine use of roentgenological examination as a part of every program in working for detection of early tuberculous disease. However, he again calls attention to its limitations, which are to be overcome by more understanding interpretation coupled with thorough clinical and physical examinations.

**Tuberculosis of Urinary Tract.** B. A. Thomas. *Am. J. Surg.*, November, 1930.

The total incidence of genitourinary tuberculosis is about 2 per cent; of this, only about 0.5 per cent is genital. Of 135 cases of urogenital tuberculosis, 84 presented disease of the urinary apparatus alone and 24 of the genital apparatus alone. 101 cases of urinary tuberculosis have been studied. Among these, renal disease predominated, irrespective of sex, and was most frequently seen in the third, fourth and fifth decades. It was much more frequent in males (4 to 2). Bilaterality was common, but this comes late in the course of the disease.

The infection may be ascending as well as haemogenous. It may appear pathologically as nephritis, miliary tuberculosis, ulcerative papillitis (being the type in which hematuria is especially common), pyelitis (probably an ascending infection through lymphatic), and the very frequently encountered caseo-cavernous tuberculosis, and pyonephrosis.

Symptomatically the affection may present itself with the following: frequency of urination, dysuria, pyuria or hematuria, especially diurnal, vague dull or dragging lumbar pain and loss of weight. Pus in urine in which pyogenic bacteria cannot be detected is a strong indication of tuberculosis, even in the absence of detectable tubercle bacilli.

Tubercle bacilli may be eliminated in the urine without evidence of renal tuberculosis and tubercle bacilli in the urine is not sufficient evidence in itself for the diagnosis. This demonstration is very important, but it must be taken along with a careful physical examination of the genitalia, chromocystography, pyelography, bilateral catheterization, differential renal-function test and exploratory lumbar incision.

Prognosis depends upon removal of the diseased organ and is definitely lessened by watchful waiting.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
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**A Five-year Study of Abortion.** Raymond E. Watkins, M.D., Portland, Oregon. *American Journal of Obstetrics and Gynecology*, August, 1933. Volume XXVI, No. 2, Page 161.

This author has very ably considered the question of abortion from the standpoint of threatened, inevitable and incomplete abortions, both those that were spontaneous and those that were induced. He has summarized the question of abortion as a national occurrence, and the treatment used in the Department

of Gynecology at the University of Oregon and has made comments upon these various factors.

He points out that the maternal deaths in the United States as a result of abortion are nearly as numerous as those due to child birth. Based upon reliable figures, it is estimated that 700,000 abortions occur in the United States annually, with 15,000 women losing their lives from this cause each year. He feels that, with all the literature directed to prevention and treatment of puerperal sepsis, more attention should be given to the treatment of septic abortion, especially to the proper management of abortion.

He points out that in the treatment two different plans are advocated. One group believes in active treatment with immediate evacuation of the uterus in every febrile abortion, unless parametrial complications are present. The second group believes in conservative management, building up the patient's resistance and waiting until the temperature has returned to normal and remained there for from five to ten days before invading the uterus. He points out in this respect that the contents are often expelled in the meantime, making an evacuation unnecessary. Only in case of dangerous, uncontrollable hemorrhage is the rule violated. Dr. Watkins points out that he, as well as most gynecologists, have adopted the latter plan of treatment.

In the 341 cases studied in this article 66 per cent recovered without invading the uterus at all. In only 36 instances was surgical intervention necessary because of hemorrhage on admittance. There is a very excellent outline of routine orders in regard to abortion cases which would be well read by those dealing with this type of patient.

The most striking recommendation for such conservative management is the fact that of 341 cases of various types, 307 of whom were febrile, the mortality rate was 3 deaths or 0.88 per cent.

A few other observations are also made. Hospital supervision should be insisted upon in all cases. Infected patients will nearly always develop an immunity to their infection if given an opportunity. The term sapremia should be discarded as it implies a non-septic state. He also feels that contraceptive measures should be more widely taught, after considering the arguments pro and con.

Comment: This is a very able review of a common and distressing condition, which, because of its frequency and importance deserves great consideration. There seems little question in my mind that the conservative plan of treatment is by far the superior method of handling these patients. Certainly the mortality rate in such treatment cannot be compared with the higher rate in the active, radical treatment.

Wendell Long.

**Anterior Tibial Apophysitis—The So-Called Disease of Osgood-Schlatter (Apophysite Tibiale Anterieure—La Sio Disant Maladie de Osgood-Schlatter).** Albert Mouchet, *La Presse Medicale*, June 24, 1933.

While apophysitis involving the tibial tubercle is not very common, it occurs often enough to be of considerable interest from the standpoint of diagnosis and treatment. Indeed, it would seem that there is much misconception concerning it.

Taking the case of a boy of 15 as a clinical example, Mouchet presents some important data in connection with this interesting pathological entity.

This is a disease of adolescence, the majority of the patients being from 11 to 16 years of age. It is

found more often in boys, and the right tibial tubercle is most often involved.

A center of ossification usually appears in the cartilaginous structure which theretofore represented the tubercle between 11 and 13 years of age. Sometimes there are several centers—a fact that ought to be remembered in the interpretation of what appears to be an irregular and fragmented X-ray negative. Before the beginning of ossification there cannot be an apophysitis.

Governed by the appearance of X-ray negative alone, Osgood of Boston in 1903, concluded that the symptoms were produced by the tearing away of the tubercle from the shaft of the tibia. A little later in the same year Schlatter of Zurich, independently came to the identical conclusion. A number of surgeons quickly accepted the dicta of Osgood and of Schlatter, and for several years the symptoms were thought to be due to traumatic "arrachement," or tearing away of the tubercle.

But it was not long until many surgeons, among them Alsberry, Kirschner, Matsuoka, Bergamann, expressed the opinion that the interpretations of X-ray films by Osgood and Schlatter were defective, and that the disease was due solely to an apophysitis of adolescence. Mouchet published an article supporting this conception in 1918. Those who subscribed to this view, which now seems to have been proven, place so-called Osgood-Schlatter disease in the same class in which is found osteochondritis juvenilis deformans, or Legg-Calve-Perthe disease.

In the case of the 15 year old boy there had been pain about the tubercle of the right tibia for several months, but he continued to walk, to run, and even to take part in field sports. However, the pain persisted, and was more severe at the end of the day. Never lancinating, it became severe enough in a few months to cause him to drag the foot, and finally to keep him in bed. About this time the patient noticed a tender enlargement at the site of the anterior tibial tubercle.

The knee joint was found to be quite normal. There was no pain on movement of the joint except a little about the tubercle on forced flexion, or when the leg was quickly thrust forward, as in kicking.

There was no redness of the skin, or other ocular signs of inflammation.

X-ray examination should be made in profile, and always of both tibiae. The affected tubercle is usually a little increased in volume, more or less irregular, and sometimes there is evidence of erosion. In reading the X-ray negative one must not forget the irregularities of ossification in individual cases—sometimes proceeding from one center—sometimes from several. A comparison of the affected with the opposite side is of great value in this connection.

The treatment recommended in the average case includes especially rest for 8 to 15 days, hot applications, hot air, followed by massage of muscles of the thigh. Ablation of the tubercle by an appropriate operation in which the ligamentum patellae is preserved is necessary in only the rare case.

—LeRoy Long.

**Malignant Tumors of the Male Breast.** M. Pinson Neal, M.D., Columbia, Mo. *Archives of Surgery*, September, 1933. Volume 27, No. 3.

To many members of the medical profession, as well as the layman, cancer of the male breast erroneously appears rather as a myth and therefore inconsequential. Malignant neoplasms of the male breast are sufficiently common to be of interest to the



practitioner of medicine, of significance to his patients and of importance to the surgeon. Very few of the articles on this subject in the literature deal with laboratory or histologic study.

The object of the study made by the author was to record the histopathologic diagnosis in over 9,279 mammary glands. He was interested in obtaining accurate information as to the prevalence and types of malignant growths of this male organ for the guidance of the members of the profession and as a source for comparison in further study. He was able to demonstrate that much of the past statistical material varies widely from the facts that are found today under an entirely different set of conditions than existed in 1890 or even in 1910 when previous reports were made. This study directs our attention to the adult male breast as an organ that is a potential site for malignant new growths, and that therefore it should be examined as a routine.

Three hundred and eight specimens of the 9,279 specimens were from the male breast. Of the specimens examined there was a ratio of one male to 29.03 female breasts. Of the 308 lesions of the male breast, in 143 the condition was a non-neoplastic disease. In 165 there were neoplasms classified as: 1. Malignant growths, 60 cases, of which 50 were carcinoma and 10 sarcoma. 2. Benign growths, 105.

There is recorded a case of liposarcoma, a case of myeloma and a case of leiomyosarcoma in the male breast. There is recorded a case of tuberculosis and a case of scirrhous carcinoma in the male breast. There is reported a case of carcinoma of the male breast with extreme generalized carcinomatosis at death, including metastases to the suprarenals, in which the skin showed the pigmentation seen in destructive lesions of the suprarenals.

His conclusions were as follows:

1. The most frequent lesions of the male breast are the non-neoplastic processes (46.42 per cent).
2. The second most frequent lesions of the male breast are the benign tumors (34.09 per cent).
3. The third most frequent lesions of the male breast are the carcinomas (16.23 per cent); tumors of skin origin account for 16 per cent of these, and those of duct or acinus origin account for 84 per cent.
4. Sarcomas constitute 3.25 per cent of the lesions of the male breast.
5. Carcinomas of the male breast were responsible for 1.24 of the carcinomas of the breast in both sexes.
6. Of the sarcomas of the breast in both sexes 19.61 per cent were found in the male breast.
7. Carcinomas are 80 times proportionately more prevalent in the female breast than in the male.
8. Sarcomas are 16 times proportionately more prevalent in the male breast than in the female.
9. Carcinomas occur in the male breast only 5 times more frequently than do sarcomas, whereas in the female breast carcinomas are seen 79 times more often than are sarcomas.
10. Of all the lesions of the breast, 3.31 per cent occurred in men.
11. The average age of patients at the time of observation for carcinoma was 57.7 years, and for sarcoma, 39.7 years.
12. The present day standardization of hospitals and laboratories is promoting a better and more extensive diagnosis of tissues and more dependable records from which statistics be compiled.

—LeRoy D. Long.

Chromicized Glycerine and Sclerosis of Varicose Veins (Glycerine Chromme et Sclerose des Ectasies Veineuses). H. Jausion. *La Presse Medicale*, July 5, 1933.

In the treatment of varicose veins of the extremities, Jausion employs the following formula:

	Grammes
Glycerine, double distilled .....	126
Chrome Alum .....	1 1/2
Distilled Water .....	200

(Here is the formula as it is given in the original:

	Grammes
Glycerine bi-distillee .....	126
Alum de chrome .....	1.50
Eau Distillee .....	200

The preparation is put into 5 c.c. ampoules and then sterilized for forty-five minutes at 100 degrees centigrade. Purity of the drugs employed and adequate sterilization are obviously of prime importance.

Referring to the criticism that intravenous use of glycerine sometimes causes hematuria, usually occult, the author admits that there is occasionally renal irritation with occult blood in the urine, but he attempts to show that, prepared according to the above formula, the renal irritation by the glycerine is so greatly controlled that there will be no evidence of interference with parenchymal integrity, manifested by casts in the urine, although he refers to a case reported by a confrere, Tournay, in which the evidence pointed to an attack upon the parenchyma.

The advantages listed are rapid sclerosing action, freedom from shock, and absence of pain.

It is preferable to inject into a full vein below a tourniquet. The amount used at each seance is from 5 c.c. to 20 c. c., the injection being made through any appropriate needle, the better size being one with a lumen of about six-tenths of a millimetre.

The injection should be made quickly and suddenly "en coup de belier" (butt of a ram), because the result depends directly upon the swiftness with which the material enters the vein.

The first injection is at the highest point (i. e., nearest the root of the limb) to be treated. Points distal are treated at subsequent seances.

The tourniquet (garrot) is removed after 15 or 20 minutes (quelque cinq minutes).

A subsequent seance is not undertaken until the disappearance of signs of chemical irritation at the site of the preceding injection—usually about eight days.

The number of seances depends upon the extent of the pathology. If the entire saphenous system is involved, four seances may be necessary.

Comment: While sclerosing agents by intravenous injection probably have an appropriate place, the surgeon must not forget the limitations and dangers of such agents. Constrictions of the circulation by resulting scar tissue, ulceration due to both chemical irritation and subsequent damage of nutrition, pain and oedema—these things follow often enough to make it necessary to select patients for intravenous use of sclerosing agents in a definite, logical and sensible way.

I trust that it is hardly necessary to emphasize the importance of knowing that the deep veins are patent before any kind of destructive procedure is carried out in connection with the superficial veins.

—LeRoy Long.

## BOOK REVIEWS

**Migraine, Diagnosis and Treatment.** By Ray M. Balyeat, M.A., M.D., F.A.C.P. Associate Professor of Medicine and Lecturer on Diseases due to Allergy, University of Oklahoma Medical School; Chief of the Allergy Clinic, University Hospital; Consulting Physician to St. Anthony's Hospital and to the State University Hospital. 242 Pages, 26 Illustrations, 5 of which are in color. Cloth, \$3.00.

For many years Dr. Balyeat has been an authority upon allergic diseases, and has succeeded in working out many problems where well known diseases have been found to be due to allergic conditions. In this volume, on Migraine, he has certainly tackled a hard problem, for every physician knows that one of the most difficult things to control is migraine. Certainly as it is to be found due to allergic conditions he has made a long step in the control of this practically intractable disease.

**Fetal, Newborn, and Maternal Morbidity and Mortality,** report of The Subcommittee on Factors and Causes of Fetal, Newborn, and Maternal Morbidity and Mortality, by Hugo Ehrenfest, M.D., Chairman, White House Conference on Child Health and Protection. Cloth, 486 pages, Price \$3.00. D. Appleton-Century Company, Inc.

**College of Physicians and Surgeons, Transactions Of. Third Series, Volume The Fifty-fourth,** Published for the College, 1932. Walter G. Elmer, M.D., Editor. Annually the College of Physicians and Surgeons issues a volume made up from the efforts of its various members and covering a wide field, too wide in fact to note the many phases which are given consideration.

It would not be illustrative, however, to leave out some of the writings which today are of intense interest and we will give them a brief note.

"Poliomyelitis," by Simon Flexner, whom it will be recalled did a great amount of original and unusually able research upon the disease when serum began to be used as a highly able control of this terrible infection.

There are also very able memoirs of Dr. Francis X. Dercum by Charles W. Burr; Hobart Amory Hare, by Thomas McCrae; John Madison Taylor, by Solomon Solis-Cohen; John B. Deaver, by Damon B. Pfeiffer; Charles Karsner Mills, by Theodore H. Weisenburg. An abstract which should be especially useful to the medical profession is "The Plan of the British Medical Association for a General Medical Service for the Nation," this is by Samuel Bradbury.

As noted in our Journal on two previous occasions the abstractor did not overlook the fact that "the rich man can pay his way, and the pauper has no difficulty, but what of the people between these extremes, of most indefinite upper and lower income limits, who comprise 80 per cent or more of the nation? They have not been trained to provide for these medical expenses. In fact there is in this country no generally known method by which such contingencies may be provided for except the savings bank." In fact the sociological condition surrounding people throughout the world is tragic in the extreme. Many of them will actually die before accepting charity under any guise. Perhaps no country, other than England, is so ridden by a question of

"dole" charity, and various funds, but notwithstanding that they are too proud to accept public aid if it can possibly be prevented.

Closely allied to this abstract is "The Curtis Clinic—Its Purpose and Its Possible Influence For The Advancement of Community Health," by Robert H. Nye; and "A Review of Some Recent Medical Literature Relating to Medical Economics, Costs of Illness, and Organization of Medical Practice," by Walter S. Cornell.

During these times of depression all such matters are of unusual interest to all physicians.

This volume includes many other interesting contributions which space prohibits inclusion.

**The History And Epidemiology Of Syphilis.** By Wm. Allen Pusey, A.M., M.D., LL.D., Professor of Dermatology Emeritus, University of Illinois; Sometime President of the American Dermatological Association and of the American Medical Association. 105 pages, Cloth, price \$2.00.

Not only is Dr. Pusey a scientific authority on syphilology but he for many years has taken an historical aspect of that age known disease. As a matter of fact since time has been, since archaeologists have been delving into the earth to bring to light the findings of the past centuries, the ravages of syphilis are always among the predominant findings. The disease is also found concurrent with nearly every infection to which the human body is otherwise affected. Dr. Pusey states that "younger physicians should light their torches at the fires of the Ancients." Certainly there is nothing in medicine more interesting than the volumes written by Fracastor sometime in the year 1500, and of course there are many other authorities. It is remarkable, however, to note that Fracastor recommended a mixture of which mercury was largely predominant, and it is more remarkable that we have not progressed much since the days of Fracastor in the treatment of syphilis.

In this volume Dr. Pusey begins with the beginning of syphilology, which he gives to history. This, of course, is taken from the Ancients—it is followed by "History of Syphilis and Epidemiology of Syphilis."

This volume will be interesting to all practitioners of medicine.

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### THE MECHANISM OF FORCEPS DELIVERY

WALTER W. WELLS, M.D., F.A.C.S.  
OKLAHOMA CITY

This subject I believe is well worth our time to consider. The object of this paper is to more thoroughly familiarize ourselves with the landmarks of the pelvis, and fetal head, and to determine from these landmarks the direction, and amount of traction that should be made in that particular part of the pelvis in which the operation is begun.

The question often arises what kind of forceps should be used. DeLee answers this question by saying it is not the forceps but the man behind the forceps. For all forceps deliveries he uses a modified Simpson forceps, which is his modification. The shanks have been lengthened to such a degree, as to keep the handle away from the anus, thus lessening the chances of contamination. The average physician does not have time or experience to become familiar with more than one or possibly two different kinds of forceps. It is not easy nor wise to change and begin to learn all over again with a new forceps. I would recommend to the beginner a long Simpson forceps, but for the hospital where a great deal of pathology is present, at least three kinds of forceps. I would suggest Simpson, Kielland and Piper. These forceps are all made with a certain purpose in view.

To fulfill the true definition of forceps, an instrument designed to extract the fetus by the head from the maternal passages, without injury to it or to the mother, the indication for forceps must be present, the application correct and the traction, absolutely in the axis, of that part of the pelvis in which the operation is begun and carried through the changing of the different axis from there to the outlet. I am not going to give all the indications for forceps further than to say, that weak uterine powers are responsible for seven-

ty-five per cent of forceps deliveries and we try to furnish that power with traction and guidance from below.

It would not be wise, and the time allotted me is too short, for me to go into detail in regard to the diagnosis for the use of forceps. It suffices to say that failure to make a complete diagnosis is one of the most common errors in obstetrical practice, perhaps the next most frequent is the incomplete preparation of the patient for operation, and by this I mean emptying the bladder and rectum before operation. Unless the patient is properly prepared, it makes the operation more difficult and injury to bladder and rectum more likely.

Now let us consider the landmarks of the pelvis so that we may become oriented in examining any pelvis, the axis of the inlet begins at the brim or promontory and extends downward to the level of the ischial spines, here the canal gradually changes until it is in the axis of the outlet. DeLee has called our attention to the transverse diameter at the spines, and in regard to engagement he calls this transverse diameter zero, and graduates it above in centimeters as minus, up to minus 5 centimeters, which is the level of the inlet, and all below the zero line as plus, plus 5 centimeters is the vulva, or the level of the outlet. I find this a very convenient way to determine the progress of labor. The spines are palpated on either side of the pelvis. This is easily determined either by rectal or vaginal examination. If the lower portion of the presenting part is at the level of the spine it is engaged. This helps to determine the direction of traction in any pelvis at any level.

#### LOW FORCEPS

According to H. J. Stander low forceps constitutes over 80% of all forceps deliveries. The fetal mortality is not great or the operation difficult except in certain funnel shaped pelvis. In low forceps the greatest transverse diameter of the fetal head would be at or below the spines, and the

sagittal suture would be in the oblique or median line. For low forceps the Simpson is used and I will not go into detail in regard to application as I feel that no one now uses any other application other than the cephalic. The pelvic application is not safe unless the sagittal suture is in the anteroposterior diameter of the maternal pelvis. When the cephalic application is properly applied the sagittal suture will be in the median line of the forceps and the posterior or small fontanel will be in front. The traction should always be in the axis of the outlet and should be made outward and upward in that axis.

Now in regard to traction, the amount of traction should be moderate with intervals of relaxation, simulating the regular uterine contractions, with periods of rest. The forceps should be unlocked during periods of rest. The delivery must be slow giving time for molding. If the forceps has to be applied in the oblique position, rotation will take place without much assistance, just traction in the axis of the outlet, upward and outward.

#### MEDIAN FORCEPS

Mid forceps or mid-application is when the head is engaged but the biparietal diameter of the fetal head has not passed the interspinous line. The diagnosis is easily made by palpating the spines and then the fetal head, the sagittal suture is usually in the oblique diameter either right or left, in this position the Simpson forceps is the best to use. The traction is made downward in the direction of the axis of the inlet until the greater biparietal diameter reaches the low position, then it is gradually completed as a low forceps.

#### POSTERIOR POSITION AND DEEP TRANSVERSE ARREST

In posterior position and deep transverse arrest an attempt should be made at manual rotation, sometimes this will correct the position and is worthy of a trial always under deep anesthesia. If this fails and there is no marked disproportion I prefer the Kielland forceps. They are easier to apply and have a sliding lock and seem to be better for traction in the axis of the inlet. With the Simpson forceps the first blade must be introduced and rotated around the face for its position on the upper part of the head, the so-called wandering blade. The Kielland first blade is introduced under the pubic arch with the cephalic curve up, and then when the

round part at the junction of the blade and shank is under the pubic arch the blade is rotated 180 degrees until the cephalic curve is on the fetal head, the second blade is easily applied posterior. This I feel is a great advantage in favor of the Keilland forceps. There is some advantage when the head begins to rotate as the Kielland has no pelvic curve and allows free rotation. This can be accomplished by the Simpson but it is much easier with the Kielland. I do not rotate but just allow the head to do its own rotation as it descends. The forceps is left in position and the fetal head is delivered over the perineum without changing the forceps. When we have delivered a child and find a deep mark of the forceps blades in the neck on one side we have made an error in application and have made too much traction laterally on the side where the mark of the forceps blade has buried in the neck. So we must always have the traction square center anteroposterior and laterally. High forceps is rarely performed and forceps on a floating head is never indicated, better a version or cesarean section.

#### FORCEPS ON THE AFTER COMING HEAD

Forceps applied to the after coming head, I believe you will agree, is by far the easiest for both mother and child if proper application is made. It has the advantage of fewer chances of injury to the child's neck. Traction on the lower jaw or pressure on the head, through the abdominal wall, unless this pressure is in the direct axis of the inlet may interfere rather than aid the delivery. The Piper forceps seems to be much better than any other due to their long pelvic curve. An assistant holds the child well forward and the right hand is inserted in the vagina to the right side of the fetal head, the left blade is introduced and applied to the right side of the head, the handle is then held steady by an assistant and the right blade is applied to the left side of the head. The blades are locked, and traction is made in the direction of the inlet until the chin is at the vulva when the traction is made upward and outward. There is no hurry, as soon as the child's mouth is at the vulva it can be sponged out or better still a tracheal catheter may be used to remove the mucus, the head can be held steady at the vulva with the forceps with no danger of the head slipping up into the vagina and the child aspirating some fluid. Hot packs may be placed around the child's body and artificial respiration can be per-



formed if necessary before the head is extracted. This in my opinion is a great improvement over the Celsus Wiegand Martin method. The Celsus Wiegand Martin method should be tried before using forceps, but if the head is not easily delivered use the Piper forceps.

#### SUMMARY

1. All the operations necessary can be performed with one forceps, but with a forceps especially designed for making traction at a certain level of the pelvis, it is much easier and safer.

2. Every hospital should have at least three kinds of forceps, Simpson, Kielland, and Piper, they are instruments made to perform a certain function.

3. A complete diagnosis of position, type of pelvis and the progress of labor before any operation is considered, will reduce the mortality and morbidity considerably.

4. The direction of traction, anteroposterior and laterally must be thoroughly determined before forceps are applied.

DISCUSSION: *Dr. J. B. Eskridge, Jr., Oklahoma City.*

The success or failure of the application of forceps depends entirely upon the operator's knowledge of the fetal head landmarks. One may misapply traction but if a mistake is made in the fetal head landmarks, either the fetal head or the maternal pelvis soft structures pay the bill. There is no doubt but that improper application, next to an undilated cervix, is the most frequent cause of failure in forceps manipulations.

I sincerely agree with Dr. Wells in that I believe that one should thoroughly familiarize himself with one instrument. We should understand the curves, the blades, shanks, handles and last but not least, indications for the instrument, and after we have mastered this one instrument we then may attempt to master other instruments. There are many men today who make no attempt to use other than one type of forceps on all operations. As Dr. Wells has stated, DeLee uses only one type of forceps, and it is said that Williams used only one type of forceps, while Pollack termed all forceps with the exception of Simpson and Elliot as "trick instruments." I am sure that we shall all do better work if we stay by the old stand-

by instrument with which we are acquainted.

Dr. Wells in his paper has considered occiput posterior and occiput transverse under the same head, but I have always considered them separately, as an occiput posterior can be handled as a single maneuver of delivering them as an occiput posterior or then may be delivered as a double maneuver, first by rotating the head and then extracting. In occiput posterior the Kielland forceps is a most excellent instrument because with one application the head may be rotated and delivered without removing the instruments, while with other forceps a double application must be made, this being due to the pelvic curve difference between the two instruments to which Dr. Wells has already called our attention.

Occiput transverse arrest must be considered under two types, because in one there are four separate and distinct procedures while in the other there are three procedures. The one in which the bi-parietal diameter of the fetal head becomes arrested above the spines of the ischium, we must correct assynclitism, deflection, then the head is rotated and extracted, while in those in which the biparietal diameter is below the spines of the ischium the assynclitism is usually corrected and we find only the deflection thereby requiring only three maneuvers in its delivery. It has been my custom to handle the occiput transverse arrests above the spines of the ischium with the Kielland, since its sliding lock is of special value in assynclitic heads. This instrument is not without its dangers as the anterior blade traverses an entire circle within the uterus, but to a certain extent this danger is modified by complete anaesthesia. In occiput transverse arrests in which the biparietal diameter is below the spines of the ischium there are only three maneuvers; that of rotation, correction of deflection and extraction, and for this procedure I have made it a rule to use the Simpson forceps as I am better acquainted with this instrument and I rotate all heads before any traction is applied. I have found it to be next to impossible to rotate these heads with downward traction without applying a rotary movement, another thing being that if the rotation is accomplished before extraction, the arc formed by the forceps is with the handle while if the rotation is accomplished with the downward traction the arc is formed by the tip of the blades,

thereby causing damage to the maternal pelvic soft structure.

Dr. Wells' treatment of the aftercoming head is beyond reproach since the Piper forceps, due to its peculiar construction is one of the best instruments that can be used. The only mistake that can be made with other instruments is that we may attempt to make a posterior application instead of applying the blade laterally and this is next to physically impossible, while with the Piper it is nearly impossible to make a posterior application with the blade.

The summary of Dr. Wells' paper is excellent and I wish to stress one point in particular: that is, use the instruments with which you are acquainted, do not experiment with new instruments until you have studied them and thoroughly understand their indications, contraindications and their peculiarities.

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#### POSTMORTEM EXAMINATIONS: METHOD OF OBTAINING PERMISSION

William J. Hoffman, New York (Journal A. M. A., Oct. 14, 1933), emphasizes the importance of necropsies in the instruction of students, development of new methods of treatment, verification of diagnoses, accumulation of accurate statistics and furtherance of research. The reasons underlying failure to obtain permission for postmortem examination are classified and discussed. A detailed plan of solicitation is described, the procedure of which is based on: unity of responsibility for securing permission for necropsy; cultivation of friendly relations between the family and the hospital personnel; a courteous and frank statement of the patient's condition while in the hospital; a prompt approach to the family after the death of the patient; a dignified, kindly and sincerely sympathetic manner during the interview; a frank discussion of the case; a tactful presentation of arguments for necropsy found by experience to be effective and the counter-arguments designed to refute the objections raised by the family. These arguments and counter-arguments are summarized, including expressions from leaders of the Jewish religion favoring postmortem examination and disavowing the frequently heard statement that necropsies are forbidden by Jewish rabbinic law. The results of this plan of solicitation are reported. Prior to the development and adoption of this procedure, the percentage of necropsies at the Memorial Hospital was 46.5. During the six months period following the development of this plan the proportion was nearly doubled. The monthly averages varied from 71 to 100 per cent, the average for the whole period being 82.3 per cent. The percentage of necropsies obtained from Jewish families was increased nearly sevenfold (from 8.3 to 62.5). Christians granted permission for postmortem examination in 89 per cent of cases. Regardless of nationality, race or religion, the chief reason impelling consent to necropsy was the family's gratitude for numerous acts of kindness and consideration, roused to its greatest power by the sincere sympathy and skillful persuasion of the solicitor.

#### THE USE OF CALCIUM IN PREGNANCY\*

CHAS. ED WHITE, M.D.  
MUSKOGEE

During the routine care of prenatal cases there are often many symptoms that the patient complains of, which the physicians consider as trivial, and for want of a better explanation these complaints are relegated to the "dump heap" of pressure symptoms. So common has the use of "pressure of the uterus" become in explaining the milder ailments of pregnancy, that it is a loop-hole for the unknown; analogous to that other "unknown" which is so often used to ease the physician's mind, "biliousness." "We have to tell the patient something," is the way most physicians feel. Unfortunately no satisfactory explanation is given as to why some of the milder complaints occur, yet they are often-times very annoying to the patient.

During the last trimester of pregnancy one of the most frequent complaints my patients seem to have is tingling and numbness of the hands and feet, together with cramps of their legs. Often-times these complaints are associated with pains in the hips, stiffness and inability to walk comfortably after arising. At times there is a general malaise with considerable nervousness, irritability and insomnia. As a general thing the patient believes that the tingling of the hands and feet and cramping of the legs is due to "poor circulation" or that they have lain in one position too long, thus causing their hands and legs to go to "sleep." These complaints are often so severe as to cause the patient to be awakened several times during the night.

It is the belief of E. C. Hartley<sup>1</sup> that this is a tetanoid syndrome and he describes the symptoms as "cramp-like, or aching pains in the legs and thighs, irritability, insomnia and often-times edema of the extremities not associated with cardiac or nephritic pathology."

There is a similarity between the symptoms of the milder types of polyneuritis of pregnancy and the tetanoid syndrome. Wilson and Garvey<sup>2</sup> state that women are frequently seen in the last trimester of pregnancy complaining of numbness and tingling in the hands and arms, and at

\*Read in joint meeting of Muskogee County and Sebastian County Medical Society (Arkansas), at Fort Smith, Arkansas, March 14, 1933.



times sharp radiating pains in the arms, shoulders and lower extremities, which they designate as polyneuritis of pregnancy. It is also the belief of Kickman<sup>3</sup> that superficial discomforts such as numbness and prickly sensations are due to a polyneuritis of pregnancy and are often very difficult to relieve.

The treatment suggested by Hartley<sup>1</sup> consists in the use of calcilact, parathormone injections and irradiated ergosterol. He experienced difficulty in getting patients to take other forms of calcium. The symptoms of his patients were ameliorated by this treatment. W. T. Pride<sup>4</sup> has successfully used calcium in the treatment of severe cramps of the legs during pregnancy.

For some time I have been using calcium gluconate and di-calcium phosphate on all patients who complain of tingling and numbness of their hands and feet or cramping of the legs. There has been absolute relief of these symptoms in two or three days without the addition of any other types of therapy. I also have found the use of this type of calcium of considerable value in many cases where there was insomnia, pain and stiffness of the hips and at times in general malaise associated with nervousness and irritability. I have made no effort to differentiate between polyneuritis of pregnancy and the tetanoid syndrome or calcium deficiency. It is a question in my mind as to whether the milder types of polyneuritis as they are commonly described are not due to calcium deficiency.

The following case will illustrate the condition in pregnancy in which I have found the use of calcium to be of value.

Mrs. L. S., para 11, was seen December 27, 1932, on her regular prenatal visit, her seventh month of pregnancy. She complained of her fingers going to sleep and of being very nervous and irritable. She also complained of a general malaise and marked insomnia, especially in the early morning hours. She was often awakened with severe cramps in her legs. This of course aggravated the insomnia. One gram of calcium gluconate three times daily was prescribed. Her symptoms were greatly relieved by the third day and completely so by the end of the week. The use of calcium gluconate was continued

throughout pregnancy, without any signs of intolerance in the patient.

Of course all patients do not have such a combination of complaints. Usually the patient first notices tingling and numbness of the hands and arms. This is often followed by cramping of the feet and legs. However any one of the symptoms mentioned in the above case might be associated.

I do not believe that calcium therapy is a panacea for all the milder complaints of pregnancy and its promiscuous use would serve about the same usefulness as a "shot gun" prescription. However, we do know that there is a marked demand for calcium during pregnancy. Although we may attempt to supply it through milk or any dietary regime we have no assurance that all our patients carry out our directions as completely as requested. There is not much doubt that patients will often tell the physician that they have followed his requests in order to please his whims, as they see them, or to keep from being reprimanded. For this reason you cannot depend on patients keeping on a prescribed diet, and then too, a great many patients will not take milk or milk products. It has been my experience that it is easier to keep a patient on medication than it is on a diet. My patients are routinely placed on cod liver oil and Mead's cereal and are urged to have a liberal supply of milk and milk products in their diets. In spite of this quite a number develop evidence of calcium deficiency. At best, the average diet is deficient in calcium. I have used calcium gluconate and di-calcium phosphate because patients will tolerate either in large dosage. Theoretically di-calcium phosphate would be the drug of choice, especially if given over a long period of time, or if there existed a low phosphorous level of the blood. I have not found it necessary to use parathormone in any of my cases. If the function of the parathyroid glands were involved its use would certainly be indicated. It is my opinion that its use is necessary only in rare occasions.

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## SUSPENSION OF THE UTERUS

DWIGHT B. SHAW, M.D.  
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The subject of suspension of the uterus has long been under discussion. There have been over two hundred operations devised for the correction of uterine displacement, and to give even a synopsis of these operations would take too long. For example, in one year, one hundred and thirty-one papers were written on the subject of posterior displacement of the uterus, and the following year seventy-two papers were published on this subject.

It is not within the scope of this paper to recount all of the operations devised by mankind, but rather to tell of the writer's experience within the past few years with the type of suspension which he has been using.

A short resume of the history of displacements of the uterus is well within order. Medical men from the beginning to about 1600 recognized displacements and prolapse of the uterus, but they confused this condition with wanderings of the uterus into other positions of the body and kindred imaginary malpositions. Between 1600 and 1800, recognition of the dangers of displacements of the uterus in pregnancy rapidly came to the front. And in 1774, Dr. William Hunter reported a case of retroflexion of a pregnant uterus, which he endeavored to reduce. It was not until 1806, however, that Dr. Holyoke of Salem, Massachusetts, reported a case similar to the one described by Dr. Hunter. During the seventy-five years intervening, between 1810 and 1885, it became evident that displacements were more common than had ever before been believed. And during this time, the pessary first had its origin. In fact, pessaries became so common that peddlers went from door to door trying to sell them. Then in the latter part of the nineteenth century, operations were used almost exclusively for the treatment of uterine displacements, and the pessary began to occupy second place.

In 1840, Alquié published his first works; Koeberle followed in 1869; Adams in 1880, and Alexander in 1881, were working with extraperitoneal shortening of the round ligaments. But it was not until 1884 that Alexander gave his operation to the world and gained his renown. Within the next five years there were

fifteen modifications. Up until 1913, nine additional modifications of the Alexander operation had been advocated. It is noteworthy that these modifications, with few exceptions, merely tended to complicate the original Alexander operation. Then several others made attempts to perform the work per vagina. This method soon fell into disuse and the world returned to the intra-abdominal routes.

Gilliam was the first to perform a round ligament suspension, and his operation we all know and do. Again, we find that the Gilliam operation had its modifications and likewise its complications. Soon the Baldy-Webster procedure was brought forward, and it was said to be better than any of its predecessors. Olshausen may be said to have been the stimulus for the anchorings of the uterus to the abdominal wall. Kelly bent the uterus in partial ante-flexion, but soon improved on his operation with a ventrosuspension, which depends for its success on the production of an artificial ligament between the abdominal wall and the fundus uteri. One could go on and describe more of these operations and still not cover them all. And yet, with all our types of operations, no one surgical procedure has been devised to fit all cases, and still be free from all faults and dangers.

It is not necessary to go into the symptomatology of uterine displacement. We are all aware of the fact that many women have a displacement, and yet have no symptoms referable to the generative organs. The most common story of which we hear, is that of the woman who is the mother of several children, often borne close together, who says that she is uncomfortable in the pelvis, has a dull, dragging pain in the back, and feels as though her "insides were going to drop out." Upon examination of this patient we find that there is either a large laceration or else extensive relaxation of the perineal floor; the uterus itself is pulled down and turned, usually backward; the cervix is often lacerated. With the exception of this pelvic condition, rarely does she present any other abnormal findings.

During the past few weeks I have been reviewing the literature relative to operations devised for the relief of displacements, and it has been noticeable that each type of operation has given relief. But it seems that the ideal operation for displacements of the uterus would be one which would: (1) restore the uterus to a



normal position with normal mobility; (2) give the patient symptomatic relief; (3) give permanency for future pregnancies; (4) not complicate a subsequent pregnancy or labor; (5) permit recognition of possible complications of pregnancy; and (6) not subject the patient to any subsequent risks, as strangulation of the bowels.

At the gynecological convention held in St. Petersburg in 1910, Dr. Van de Valde reported 217 different surgical methods for correction of displacements of the uterus. No doubt in the twenty-three years since that time there have been a large number employed in addition to the original 217. Yet today I doubt if there is one operation which is universally used, and which can be used for any and all cases of uterine displacement needing surgical intervention. And also we must remember that there are a number of patients who have displacements without symptoms, and hence, do not fall within the operative class. Consequently, we must be careful that we are not like the specialist in tuberculosis who always finds tuberculosis in his patient; the neurologist, who always finds something of a neurological nature wrong in his patient; the urologist, who always finds something at fault in the genito-urinary system; and so on among the specialists until the gynecologist has to find that all the woman's trouble is in a malcondition of the reproductive organs. As to whether we are right or wrong depends entirely on the results obtained by our surgical intervention. It has been my observation that those women who have suffered the above mentioned ailments and submit to operation, if improved, are really friends for life.

For the past few years I have been employing a modification of the operation as mentioned by Dr. Clarence B. Sacker of Dallas, Texas. In this modified procedure, the round ligaments are grasped anteriorly and sutured both to each other and to the fundus uteri. The point of suturing depends upon the relaxation of the ligaments. This operation requires but little time, and permits the fulfilling, in my opinion, of the six epostulates mentioned above. So far, the results have been such that my patients have been very grateful, because the symptoms have been alleviated. In addition to this type of shortening of the round ligaments, it is my practice to repair the perineal floor, to remove the appendix, and to correct pelvic disorders if present. Of course in this operative pro-

cedure all raw surfaces are carefully covered. And it is to be noted that the ovaries are invariably pulled out of the cul-de-sac where they might become swollen and cause discomfort to the patient. I am not presenting this operation as a new operation, but I am telling of the type I employ with the idea in mind of hearing the discussion by men whose experience exceeds mine, and to find whether they, through their more extensive experience, have had to abandon this type of procedure for correction of uterine displacements.

In conclusion, I wish to call your attention (1) to the six points, which in my opinion are necessary for any operation used in the correction of uterine displacements; (2) to the number of operations of uterine displacements now in vogue; and (3) to the method of shortening the round ligaments which I use in my operative procedure.

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#### DISCUSSION: *Dr. J. F. Kuhn*, Oklahoma City.

This paper certainly shows a large amount of work and effort. There is no doubt as to the effectiveness of this method in certain selective cases, and it like all other methods should be utilized in that type of patient to whom it is particularly applicable. I do not think we should tie ourselves to any one operation. I think we should have in mind several fundamental features, first as to whether this particular operation elected is going to fulfill the laxation of the cardinal ligaments, what will be the next step, then develop modifications for the particular type of operation that has been elected. This is one of the oldest types of suspensions, and it is very applicable in a large group of women, particularly if there is no relaxation of the vaginal vault and the ligaments show no pronounced relaxation.

*Dr. Shaw*: I have nothing further to say, except that I do perineal repair for the relaxed perineum.

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#### UNUSUAL HEMATOLOGIC REACTION TO NEOARSPHENAMINE

Murray L. Rich, Cincinnati (Journal A. M. A., Oct. 14, 1933), reports a case of acute thrombocytopenic purpura in which a smear taken three hours following an injection of neoarsphenamine showed, in addition to the thrombocytopenia, the presence of numerous degenerated neutrophilic cells. There was also evidence of intense marrow stimulation. These conditions quickly disappeared. It is concluded that neoarsphenamine at times has not only a toxic depressant action on the bone marrow but also a destructive action on some of the circulating elements of the blood, and that the neutrophilic cells as well as the patients are susceptible to its action.

#### INFLUENCE OF ENDOCRINES ON MENSTRUATION

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There has been so much experimental and clinical work done in the past few years on the effect of certain endocrines on menstruation the busy practitioner can hardly find time to keep up with the progress made. Out of these efforts has come a clearer knowledge of the physiology of menstruation, correlation of the ovarian and uterine cycles, and a rational application of endocrine therapy. While all the glands of internal secretion have some influence on endocrine balance and remotely affect those concerning menstruation, it is my desire to consider only those of proven significance in menstruation. The glands directly responsible for the menstrual function are the gonads and the pituitary. The thyroid, while not necessary for menstruation, profoundly influences the cellular activity of these glands as well as all other metabolic processes, and cannot be ignored in this connection.

The normal menstrual cycle occurs every twenty-eight days, is characterized by histological changes in the endometrium, perfectly synchronized with corresponding changes in the ovaries, and entirely dependent upon their secretions.

Following menstruation there begins regeneration of the uterine mucosa. Simultaneously, the corpus luteum of the preceding cycle continues to disintegrate, while another primordial follicle begins development into another graffian follicle. For about fourteen days there is continued growth of the mucosa under the stimulating influence of oestrin, elaborated by the maturing graffian follicle. The mucosa becomes differentiated into layers, the glandular elements increase in length and number. Rupture of the ripened follicle now ensues and the ovum, with a large quantity of follicular fluid containing oestrin, is liberated. The latter is absorbed and carried to the uterus where it promotes uterine growth and vascularity. From the ruptured graffian follicle the corpus luteum is formed. The luteal body continues the formation of oestrin and assumes a new role in elaborating another hormone, progesterin, which inhibits further follicular growth, and sensitizes the endometrium for nidation. Combined action of these hormones produce further



growth and turgesence of the endometrium, the glands become tortuous and distended with secretion, as the cells resemble decidua cells. Subsequently, menstruation occurs as a direct result of retrogressive changes in the corpus luteum and cessation of oestrin production. It is characterized by disintegration and exfoliation of the superficial layers of the hypertrophied endometrium opening the blood vessels of the spongiosa.

From the foregoing recitation of the physiology of menstruation it will be seen that the ovary produces two distinct hormones: Oestrin, the female hormone produced by the growing primordial follicle up to the time of ovulation, and the corpus luteum the latter half of the intermenstrual period, is wholly responsible for growth of the genital tube and determines the development of secondary sex characteristics. While its influence is a requisite of uterine growth, the unique role of this hormone in menstruation is stimulation of growth and vascularization of the endometrium up to the progestational phase, where the twin hormone of the corpus luteum, progesterin, prepares it for nidation. Therefore, hyposecretion of oestrin is invariably attended with genital hypoplasia, evidenced by diminished functional activity, except in cases of delayed menstruation in adolescent girls where much genital hypoplasia has not yet occurred, and in follicle cystosis, a condition due to failure of follicle rupture from thickening of the ovarian tunic. The majority of cases directly attributable to lack of follicular hormone occur in adult women and are attended with lack of libido, amenorrhea, oligomenorrhea, hypomenorrhea and sterility, or various combinations of these. Recent literature on the subject of menopausal amenorrhea with its attendant vasomotor symptoms, contains numerous reports of brilliant results from the use of follicular hormone in these cases. Theoretically and clinically this is a most potent means of controlling these distressing vasomotor symptoms, yet the Council of Pharmacy and Chemistry failed to approve it for the list of official drugs. They reasoned that the influence of oestrin on the natural menopause must be guarded as the symptoms are subjective and the benefit derived from this therapy might be psychic. However, as no harm can come from the use of oestrin, at this time, there is a preponderance of clinical evidence in favor of giving it a trial.

The administration of follicular hormone in the treatment of the foregoing conditions is more or less problematical, as there is no way of determining the amount of hormone lacking, nor the time it will be most needed. There are methods of determining the oestrin content of the blood too complicated for universal adoption and not imperative for clinical application of this therapy. It is known that small doses have no effect on the parent ovary, while large ones have an inhibitory effect. The quantity given should be governed somewhat by the degree of genital hypoplasia as it is directly proportional to the lack of follicular hormone, keeping in mind the inhibitory effect of large amounts. Since the therapy is purely substitutive it may be advantageous to give the gonad-stimulating hormone of the pituitary in conjunction with the follicle hormone, with the expectation of increasing ovarian production of the hormone, permanently. Upon the assumption that growth and vascularization of the endometrium occurs during the first part of the intermenstrium through the influence of the follicle hormone—that the luteal hormone, progesterin, reaches maximum concentration in the latter part just before menstruation, and that the effect of the latter is not growth-stimulating, the logical conclusion seems to be that hormonal substitution should take place during the time it has its greatest functional influence. Hence, the time for giving oestrin may be arbitrarily designated as the first twenty days following the menstrual flow.

The mode of administration is a mooted question. It has been determined that hypodermic administration is followed by rather rapid excretion of the hormone in the urine and other secretions. Furthermore, this is a painful and expensive method, but has the advantage of greater psychological influence which is a factor in the stimulation of glands of internal secretion through the autonomic nervous system; oral ingestion is more effective clinically because of gradual absorption and prolonged retention in the blood.

Follicle hormone is now available in several standardized products for both oral and hypodermic administration. The source of supply, the urine of pregnant females, amniotic fluid, placental tissue and others, seems sufficient for present therapeutic demands, and is being distributed under various trade names, namely:

theelol, theelin, amniotin, progynon and others. For convenience, the potency is designated by rat units—a generally accepted unit of measurement first employed by Allen and Doisy, and is put up in tablets, capsules and oil suspensions to be given by mouth, while for hypodermic use it is supplied in ampoules. The dose varies somewhat with the judgment of the clinician, but averages around fifty rat units daily.

Progestin, the specific hormone produced by the corpus luteum, seems to have a dual effect in sensitizing the endometrium for nidation, while it inhibits follicle development. On the surface these two secretions of the corpus luteum appear antagonistic, but they are actually synergistic in that the oestrogenic principle prepares the endometrium with growth and vascularization while the luteal hormone, progestin, produces the necessary progestational changes. Likewise, the corpora luteal hormone is necessary for the preservation of pregnancy, at least during the early months, through its nidatory influence and its ability to inhibit uterine contraction. It is believed that if fertilization and implantation of the ovum into the sensitized uterine mucosa occurs, there is some inherent stimulation of the anterior pituitary to production of additional lutenizing hormone for maintenance of corpora luteal growth and activity until the production of this hormone can be supplanted by elaboration of a lutenizing hormone by the placenta. So there is an interdependence of the fertilized ovum and the corpus luteum, at least during the early weeks of pregnancy. Evidence tends to show that it is the inhibitory influence of progestin upon follicle growth that prevents menstruation during pregnancy, as there can be no corpus luteum without maturity and rupture of the graffian follicle, and no true menstruation without the progestational changes produced by this hormone. Therefore, the indications for substitutional progestin therapy are: functional uterine bleeding, threatened expulsion of the products of conception, and certain types of sterility. There are no standardized preparations of progestin available, but lipo-lutin, agomensin and other commercial products of the corpora lutea are said to contain large amounts of the hormone, although they are not free from oestrin admixture, which may be a disadvantage in the treatment of functional uterine bleeding. While some of

these cases of uterine bleeding may be from moderate lack of lutenization and respond to anterior pituitary sex-hormone therapy through its lutenizing effect, others will be benefited by the addition of a progestin product. Moreover, there is no disparity of sex-hormone in the blood of patients with threatened abortion of endocrine origin, so that substitution of progestin is the only therapy applicable. In the treatment of sterility progestin may be tried in regularly menstruating women who do not respond to the sex-hormone, in the latter part of the menstrual cycle for its nidatory effect on the endometrium. If this hormone could be obtained in a staple standardized form it would be ideal for the treatment of the foregoing conditions. However, notwithstanding the impurity of the present commercial products of progestin, clinical results justify their use until better may be had. The dose of progestin varies with the severity of the condition to be treated, but has no damaging effect in over-dosage as do some of the other hormones. An ampoule of the corpora lutea extract injected hypodermically every day or so during the time its effect is desired, is usually sufficient for clinical results.

Laboratory and clinical workers have recently established the fact that the anterior lobe of the pituitary gland produces in addition to a growth-promoting hormone, a gonad-stimulating hormone (sex-hormone) which totally controls ovarian function. This gland-stimulating extract designated prolان by Zondek and Ascheim, is said to contain two hormones: prolان-A, a follicle ripening hormone, and prolان-B, a lutenizing hormone. Whether there are actually two prolان hormones or only one, all investigators are agreed upon the dual effect of the gonad-stimulating hormone in evoking both phases of the ovarian cycle. In fact, it is our belief that the rhythmic intermittency of oestrin production by the graffian follicle and by the corpus luteum, in response to anterior pituitary stimulation, is responsible for menstrual periodicity. Experimental studies have shown that the greatest concentration of the sex-hormone in the blood of women is between six and nine days after the onset of the menstrual flow when the blood oestrin is at its lowest level. This leads to the hypothesis that the high oestrin content of the blood during premenstrium inhibits anterior pituitary activity



resulting in the corpus luteum regression causing menstruation.

Prolan is now being recovered in quantities sufficient for therapeutic needs from the urine of pregnant mammals, has been standardized and is being marketed as prolan, follutein and antuitrin-S, and offers a wide range of usefulness in functional menstrual disturbances. There is some divergence of opinion as to the identical similarity of the sex-hormone obtained from the blood and urine of pregnant females, and that extracted from the hypophysis. Some believing that the pituitary produces a pro-hormone that is capable of converting the growth-promoting hormone into prolan; others that it is placental in origin. If it is placental in origin, it should be far more effective in increasing or restoring pituitary function than an extract obtained directly from the gland. Whether administration of sex-hormone stimulates the pituitary gland in the production of gonad-stimulating hormone or is purely substitutive, the influence on the ovaries is stimulative. It follows that conditions of hypo-function of either pituitary or ovaries are amenable to prolan therapy. The degree of reaction produced by administration of prolan depends entirely upon the amount given. Small doses stimulate all phases of the ovarian cycle: follicle growth and maturation, ovulation and lutenization. Large doses, however, rapidly convert the maturing follicle into lutein tissue before the occurrence of ovulation, resulting in hyper-lutenization. Therefore, large amounts should be administered during the latter part of the menstrual cycle only and at the time uterine bleeding occurs, while small doses may be given throughout the intermenstrium for promotion of menstruation through ovarian stimulation.

It has been estimated that eighty per cent of functional menstrual disorders are due to anterior pituitary insufficiency. We know the majority of amenorrhic women owe their condition to inadequate gonad-stimulating hormone, and that the functional bleeding of puberty and maturity is likewise due to this factor.

When we consider the significance of the anterior pituitary hormones in the growth and genital development of young girls approaching puberty, we should be concerned about evidences of pubescence. Delayed menstruation or abnormal bleeding are evidences of endocrine dysfunction and should be corrected. Delayed men-

struation is directly due to lack of ovarian function which is dependent upon the gonad-stimulating hormone of the pituitary. Administration of thyroid, the endocrine activator, may stimulate the pituitary to production of gonad-stimulating hormone sufficient to meet ovarian requirements. If not, administration of sex-hormone, five to ten rat units every day or so, in conjunction with thyroid will yield gratifying results; whereas large doses of sex-hormone, two hundred units daily, is almost specific for functional uterine bleeding of puberty and adolescence. As previously stated, the mode of action of large doses of sex-hormone is through rapid lutenization of persistent graffian follicles, with subsequent production of progestin to neutralize the effects of the follicular hormone, oestrin. Bleeding at or near the menopause, however, presents a different picture. It has been shown that declining ovarian function of the menopause is attended by a compensatory hyperfunction of the anterior pituitary lobe in an attempt to stimulate the declining ovaries. Therefore, administration of sex-hormone in these cases could have no value.

There is an interval type of uterine bleeding not explained by the cyclic phenomenon before expounded, sometimes accompanied by pain. It has been suggested that this bleeding may be due to failure of folliculin between ovulation and the formation of a functioning corpus luteum, and that the pain is due to follicle tension from sclerosis of the ovarian tunic. As the bleeding and pain occur about the time of ovulation, and some observers have recognized minute hemorrhages in the endometrium at this time, we might assume that the bleeding is but an exaggeration of the normal histological changes. However, this may be, prolonged observation of some of these cases have been rewarded with ultimate recognition of cystic changes in the ovaries, which is suggestive of pituitary malfunction.

Functional dysmenorrhea is a menstrual dyscrasia frequently encountered in cases of genital hypoplasia of endocrinopathic origin, and occasionally due to fibrotic changes of another source. Of the various theories of the etiology of dysmenorrhea, including vascular tension from incomplete emptying of uterine vessels on account of replacement of uterine muscle with connective tissue, and instability of the autonomic nervous system, resulting

in increased irritability of the autonomic nerve endings of the uterus, the latter seems more logical because of relief afforded these patients by the sedative influence of oestrin on the autonomic nervous system, and the permanent cure resulting from sympathectomy. As mentioned, oestrin has a dual effect on these conditions: re-establishment of uterine muscle function through its growth-promoting influence, and sedation of the autonomic nervous system. The method of administration of oestrin in dysmenorrhea is the same as in genital hypoplasia. Occasionally it will be advisable to give progesterin in the premenstrual period and during the flow where the dysmenorrhea is accompanied with menorrhagia.

The thyroid gland has long been recognized as the stimulator of endocrine activity, as well as the prime factor in general metabolism. A deficiency of this hormone in young individuals causing undergrowth (cretinism-dwarfism) likewise results in hypoplasia of the genital organs with attendant symptoms of hypofunction. Whether its influence on the sex organs is direct or through the pituitary gland the fact remains that administration of thyroid substance is often followed by alleviation of these symptoms, particularly where they are attended with a low or minus metabolic rate. While the functional menstrual disorders of thyroid origin comprise a number of the hypomenorrheal conditions, menorrhagia is a most common sequela of thyroid hypofunction. Thyroid extract, a known potent therapeutic agent in the treatment of general asthenia, obesity and other low basal disorders, will be found equally efficacious in the treatment of menorrhagia and hypomenorrheas, through its activation of the glands involved or in conjunction with supplemental hormonal therapy.

Lastly, I desire to call attention to the known relation of the mammary glands to that of the ovarian and uterine functions. As previously stated, the oestrogenic principle of the ovary determines development of the mammary glands, and additional growth may be stimulated by administration of oestrin; yet it has no influence on lactation. On the other hand, the mammary gland, presumably through a hormonal effect, causes ovarian atrophy and subsequently lessens uterine bleeding as evidenced by the amenorrhea of lactating women. Whether this effect is direct through a hormone or through its influ-

ence on the pituitary, empirically it may be helpful in reducing uterine bleeding.

In summarizing the facts and theories enumerated and correlating them with the voluminous reports on the clinical application of endocrine therapy in the sexual sphere, one is impressed with the future therapeutic possibilities of these isolated hormones. While endocrine therapy is not a panacea for the ills of the menstrual molimen and should be administered with great caution, after the exclusion of anatomical and pathological distortion, it does offer certain definite effects exclusive of the psychological impression upon the autonomic nervous system.

1. Oestrin, the female hormone produced by the maturing graffian follicle and the corpus luteum, is a positive factor in genital growth and the determination of secondary sex characteristics. It is available for therapeutic administration and should be given a clinical trial in ovarian deficiency attended with genital hypoplasia, delayed and deficient menstruation and sterility. It may be advantageous in the treatment of menopausal and dysmenorrheic conditions, for its sedative effect on the autonomic nervous system. While in small doses it is a potent therapeutic agent for good, in large amounts it has a destructive influence on the ovaries.

2. Progesterin, the specific hormone of the corpus luteum, is a necessary prerequisite to nidatory changes of the endometrium. Gestation cannot endure without its influence at least during the early months. It is almost specific in the control of functional uterine bleeding, through its inhibitory effect on follicle growth and uterine contraction. It is not available in pure form but may be had in certain non-standardized products that are of some value clinically.

This luteal hormone may be tried in the premenstrual period of dysmenorrheics, accompanied by menorrhagia, for the control of bleeding. It may be tried in regularly menstruating women for its nidatory influence on the endometrium in the treatment of sterility.

3. Prolan (sex-hormone) a gonad-stimulating hormone produced by the anterior pituitary gland, totally controls both phases of the ovarian cycle and is responsible for menstrual periodicity. It is being recovered in pure crystalline form and disseminated for hypodermic admin-



istration. This sex-hormone offers a potent means of combating ovarian hypofunction through its stimulating effect, and anterior pituitary deficiency, by substitution. Small doses stimulate while large ones inhibit menstruation. Delayed menstruation and genital development are responsive to fractional doses of prolan, while large amounts are almost specific in the control of functional uterine bleeding. The interval type of uterine bleeding often accompanied by follicle atresia, may yield to the lutenizing effect of prolan.

4. Thyroid is the stimulator of all the glands of internal secretion, as well as of general metabolism. It is particularly indicated in functional menorrhagia, and may be helpful in the hypomenorrheas.

#### REFERENCE

Clinical Endocrinology of the Female. Mazer & Goldstein.

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DISCUSSION: *Dr. Wendell Long*, Oklahoma City.

Dr. Wilson has very ably presented the information that is at our disposal at the present time and has outlined the influence of the endocrines upon menstruation. It is rather remarkable that at this time we know as much as we do about the endocrines in relation to menstruation. As you will recall, it was only four years ago that Zondeck of Berlin, was pursuing his study on the influence of these particular glands in relation to the ovary. It was after that the ovarian hormones were isolated, so that much work has been done in the last few years. Much more is being done. Dr. Wilson has very ably pointed out these things that we know and he has tried to eliminate the controversial points, and yet with that sort of information at hand, one to be thoroughly scientific must admit that there is a great deal that we do not know about the endocrines and their relation particularly in connection with the genitals. A good example of the confusion that we have at present can be demonstrated by the recent work of Elmer Novak who was a very eminent man and has done probably as much as anyone else in this field.

It is true that in certain cases very carefully and very painstakingly worked out, sometimes a man will feel that a particular hormone is the thing to be used and he will use it probably at the proper time and

the result will be rather discouraging. This does not minimize it in any sense, however, because it is of much more help. Dr. Wilson has talked about the means by which these things were done and the urgency to be used, but I should like to say that in determining the deficiency and determining the treatment and determining the pathology in these conditions, it is first the duty of every doctor to make a thorough examination of these people, going thoroughly over them and determining very carefully which hormone is to be given and how much to give. The present situation on hormones in relation to menstruation is a little bit confused. Dr. Wilson has talked about the very definite relation between the pituitary and ovarian function and the endocrines. That is about as far as we have gone. There is another influence, the influence of the breasts and thyroid and even simple things which have some effect upon menstruation; we cannot tell always how much influence it is going to have. For example, a few years ago we reported some cases of menorrhagia in obese people where simple reduction of weight reduced the menorrhagia so that they were perfectly normal thereafter, and after doing general physical examinations I cannot quite agree with the people who become terribly disturbed about the urgency of the moment and want to treat the pelvic condition rather than some other condition of the body which needs treatment about as much or more. For example, obesity, hyperthyroidism, tuberculosis, or any other definite pathological condition the patient may have.

This brings me to the last point I should like to discuss and that is the young woman—zealous protection of the woman not only at the moment but through the entire sexual life, and it is rather easy to be induced by the seeming urgency of the moment and do things that will materially affect that woman throughout her entire life. It is only necessary to point out to you men that young women who seemingly have great dysmenorrhea and other symptoms of pelvic trouble often go along and with time adjust themselves. What I really mean is this, in the present moment when we are coming to the point where we are getting positive sex hormones and getting hormones that are potent, we must not forget that the human mechanism especially in relation to the

whole system is a pretty reliable guide and it is hardly our duty to interfere. All of us have seen young women who have had profuse menstruation stop without any seeming cause at all. It is only where we have an alarming blood picture that we should interfere.

I have enjoyed Dr. Wilson's paper very much. He has presented the matter ably. This is a limited subject. It has its uses, but we must all be rather cautious, not becoming cynical or skeptical or on the other hand becoming terribly enthused.

*Dr. Wilson.*

I appreciated Dr. Long's discussion very much. I hope you will observe that I attempted to present this in a way that might be of some practical benefit to the men who are not attempting to go into it as thoroughly, perhaps, as Dr. Long and myself, and certainly the patient with whom you come in contact will give you more familiarity with the physiology and pathology of these conditions. Obviously it will be necessary for me to omit discussion of any other than functional disturbances. I am glad that Dr. Long brought out the fact in his discussion of the importance of examination. First, of course, you must examine the patient thoroughly and eliminate any other than functional disturbances. As to menorrhagia of young girls, you all no doubt have had the experience that we have had in giving ovarian extract and mammary gland substances and these menorrhagias have cleared up, so that I believe this was due to the luteinizing effect of the ovarian extract, which so far seems to be definitely shown.

I tried to make clear the fact that a small dose was far safer and could be used, with impunity, whereas a larger one could be used only if handled with the utmost precautions. I do feel like that in the young girls who consult us time after time about delayed menstruation and lack of development of the genitals and breasts and female characteristics, that anterior pituitary hormones should be tried in these cases with the hope of promoting genital development for it has been definitely shown that these patients tend to be the infertile later on in life, and if this development can be promoted they are much more apt to be fertile during maturity.

## BIOLOGICAL ACTION OF RADIANT LIGHT AND ITS USE IN MEDICINE

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With the discovery of the roentgen ray and radium, there arose the question that has arisen on the discovery of every new chemical substance or physical phenomenon, namely, what is the effect of these rays on life and living things? This was the expression of no idle or academic curiosity but was a serious question arising from that quest—as old as the history of man—which has been the reason for the birth and much of the development of the sciences we know today—which is, the better understanding of disease and knowledge of how to minimize, prevent, and save the victim from the ravages of disease. So eager is this quest that with radiant light as with every other discovery in chemical, physical, or biological fields, scientists hastened to apply the new found phenomenon to diseased tissues without waiting to understand the nature or carefully studying the effects of radiant light on living tissues. This led to such disastrous results that the use of radiant light in medicine or the hope of finding any beneficent effects were almost abandoned. However one effect of radiant light has kept alive the hope of beneficence and stimulated the continued study of this phenomenon—that effect is the destruction of tissues. It is largely for this effect that it is used today and it is the hope of learning how to control this killing effect that the study of radiant light goes on. It is for the purpose of summarizing and bringing to your attention the results of these studies that this paper is presented.

For the purposes of this paper I shall not enter into the physics of radiant light. Also I will make no distinction between X-ray and radium emanations because in the words of Dr. Francis Carter Wood, "There is no evidence at present to indicate that there is any difference between filtered X-ray and radium rays in their biological action." Which of the two sources of radiant light will be used in a given case is decided by two considerations, one economic and the other the location and accessibility of the lesion to be treated. The economic reason is so appar-



ent that it needs no explanation. It is a question of cost. An X-ray outfit costing \$5,000.00 will give as effective radiation as \$2,000,000.00 worth of radium<sup>1</sup>. The other consideration—location and accessibility of the lesion—is also made plain in a word. If the lesion is accessible, for example in the uterus, the implantation of radium in the lesion comes nearer radiating only the tissues desired than the X-ray which must pass through many centimeters of tissue in order to reach the desired point. Also there are two questions arising in the latter instance. One is, what is the light doing to the tissues through which it must pass to reach the desired point? The other is, what are these tissues doing to the light, so, what is its effectiveness when it reaches the desired point? These are some of the points that will be taken up in the following discussion.

When radiant light was first discovered it was applied in what might be termed its crude form. The first point noted in the effect of its application was a delayed reaction. That is, several days passed after the application before anything happened. The next effect noted was that a process of tissue destruction set in which grew steadily deeper and wider and, worse yet, failed to heal, so that gaping wounds were left. This was due, as we now know, largely to over dosage but as was stated above, this almost led to the abandonment of the use of radiant light. However, as with Pandora's box a hope was born or left behind out of this disaster. Perhaps here, because of its destructiveness, was the long, long sought for cure for cancer. During the years that have passed since the discovery of this phenomenon, radiant light in the treatment of cancer has been made use of with what success we shall see. During this time also, two lines of investigation have gone on. One directed to an understanding of radiant light, and the other, to its effect on tissues.

So far as radiant light itself is concerned, especially radium rays, the rays as they issue from their source are not simple or single rays, all of the same nature, but are compound, or there are a series of rays of different wave lengths. Thus radium emanations are now divided into three sets, alpha, beta and gamma. It is obvious that each of these series would have a different effect on living cells. Therefore, the problem arose to find some way of separating these emanations so that the de-

sired series might be used. It was found that by passing the rays through various substances the longer wave lengths could be absorbed or stopped allowing only the shortest or gamma waves to pass. It was also found that much of the burning of the tissues was due to the longer wave lengths, which was fortunate since they are the easiest stopped. Another thing that was found out was that the rays emanating from a given point were not like arrows shot from a port hole but like the petals of a chrysanthemum, leaving a given point at every angle up to 180 degrees. So before making an application to a given area a portal must be provided so as to as near as possible get only the parallel rays else a much greater area than desired would be radiated. However, there is a limit to which a portal may be reduced for depth dosage, because with reduction of portal, fewer rays can pass so that with a portal 20x20 mm., a better depth dose can be given than with a portal 2x2 mm., or a 30% smaller dose can be given with the larger portal<sup>2</sup>. It was also found that the greater the distance of the source of emanation from the surface to be treated the more parallel the rays which reached the surface, so that better results are obtained with a distance of 80 centimeters than 5 centimeters, about 40 centimeters being the best mean for X-ray.

As to what the tissues do to the radiant light, measurements have shown that, for example, a dose of 200 Kv filtered through .75 mm., of copper with a portal 20x20 mm., the dose at 10 centimeters below the surface is 40% of what falls on the skin. Thus under the most favorable conditions 60% of the emanations are lost in passing through 10 centimeters of tissue<sup>3</sup>. What becomes of this 60%? Dr. Wood states that, "with high voltage 50% of the energy entering the tissues may scatter back to the surface." The remainder of the loss is absorbed by the tissues through which the rays pass. In other words, the tissues act as filters and absorbers of radiant light. That they do act this way is shown by the reaction of the tissues, because since there is a reaction of the tissues, and since the tissues must absorb the emanations in order to be affected by them there must be an absorption in proportion to the reaction. This absorption is not a constant factor that can be calculated because each type of tissue has a different absorption coefficient, and, as will be brought out later, this varies with the

same tissue at different times. So it is evident that one never knows in subsurface dosage—for example, breast carcinoma, or bone marrow—how heavy a dose is reaching the desired area, except that the amount of light applied to the surface must be several times as great as that desired in the area to be radiated.

The question as to what radiant light does to the tissues is by far the most important and fundamental proposition, for this is the sole reason for using these rays in medicine. As stated above, it was the killing effect of radiant light that has kept up the study and use of this agent, but it has been found to have other effects which will be discussed later.

Radiant light has been applied to all infectious processes as well as tumors and blood diseases such as leukemia and primary anemias. The results have been encouraging and discouraging, both as to effect on different lesions, and individual cases of the same type. So far as infectious diseases are concerned, radiant light is now used only in certain types of skin lesions. Its use is valueless in deep lesions and positively detrimental in certain types of lesion, for example tuberculosis. The results obtained in the application of radiant light to tumors has not been attended with uniform results either in general or in the hands of individual investigators. Some are enthusiastic for its use, some condemn it as useless if not actually pernicious, and there is no general agreement as to how or when radiant light should be used if at all. The reasons for this disparity of results are many. Some of them have already been indicated, but there are many others. In order to find out what these factors are vast sums of money have been expended and millions of observations have been made in special institutions for this study, in laboratories and in the clinical field. Let us now turn to some of the typical and significant observations and the interpretation of them.

In order to study the extent and nature of the biocidal action of radiant light various laboratory experiments have been carried out. These have consisted in exposing to radiant light, root tips, insect eggs, cells in tissue cultures and masses of tissue in cultures. If more isolated cells in tissue cultures are exposed to radiant light they almost immediately lose their motility, apparently shrink and then disintegrate. These effects are more noticeable at the periphery of the culture. The

cells in this region are the youngest cells in the mass. This, and similar observations have led to what might be called Dustin's law of radiosensitivity. Dustin<sup>4</sup> states that those cells are particularly sensitive to radiation in which the nuclear chromatin is in a condition of consolidation or karyokinesis, resting cells are more resistant. Another set of experiments dealing with factors effecting the transplanting of cultured cancer tissue are summarized by Fischer, Lasar, and Mayer<sup>5</sup>. These men state that cancer cells rayed without transfer to new medium, stand high doses without interference with growth, while if rayed with only small doses, die if transplanted to new media.

What could be a more ideal cure for cancer? Cancers are supposed to be composed of young cells and a large part of these cells are in a state of karyokinesis. Therefore cancer cells should be more radiosensitive than tissue cells which are for the most part resting cells. Further, if radiated cells tend to die if transplanted it would surely look as if radiation of a tumor would prevent metastases, and this is the most serious of all phases of the cancer problem. If it were not for metastases cancer would not be nearly so serious a disease.

With renewed hope, backed and based on the experimental facts just cited let us turn to the clinical field and see what has been the actual result, and if or not there are other problems to be solved. Himmelmann and Lehman<sup>6</sup> reviewing the cases of cancers of the breast at the University Clinic at Bonn treated with surgery alone and with surgery and X-ray found that of the cases treated with surgery alone 42.6% were living at the end of three years and 34.6% at the end of five years, while those treated with surgery and radiation 32.4% were living at the end of three years and 16.7% were living at the end of five years. Halberstaedler and Simons<sup>7</sup>, reviewing cases of radiated and non-radiated cancer conclude that the prognosis is 40% more favorable in non-radiated than radiated cases. Giordano<sup>8</sup> ridicules the treatment of lingual carcinoma with radium and X-ray. Wickham<sup>9</sup>, reporting twelve cases of carminoma of the parotid concludes it is not proper to use radiation when the tumor can be completely removed surgically, Fraser<sup>10</sup>, reviewing six hundred forty-six cases of malignant involvement of the external auditory meatus recommends radiation af-



ter surgery. Warwick", recommends extensive blocking with radium before surgery, to prevent metastasis. Some clinicians report good results, equal to or better than surgery. There is a pretty general agreement that radiant light does give results equal to or better than surgery in cancer of the cervix. Some point to the fact that surgery is no sure cure for cancer and that granted the results of radiant light are no better than surgery, its use is less mutilating, does not require an anaesthetic nor prolonged hospitalization. This latter attitude is not scientific, and is very like excusing one's misdeeds by saying, "everyone else is doing it."

So it would seem that the sun which rose so bright and clear soon went behind clouds and left us in probably deeper gloom than before. But the fact still lingered that radiant light destroys tissue. So the study and use of radiant light goes on.

If we turn again to experimental and clinical observations we find facts which partly explain the disparity of opinions and discouraging results just cited.

On the experimental side, using simpler organisms we find a situation illustrated by a statement of Wood", which is as follows, "If a group of fifty paramoecia are obtained by reproduction from a single individual so that they are all of the same age, each individual will be found to have a different radiosensitivity." From clinical observation we find that squamous cell epitheliomas of the rectum are more radio sensitive than adenocarcinomas of the same organ. In the cervix uteri the least differentiated types are more highly radiosensitive while in the tongue and lip, where the cancers arise from the same type of tissue, the best results are obtained in the most highly differentiated types. Lymphoblastomas are very radiosensitive while melanoblastomas are not affected injuriously by radiation. Again it would seem that the problem was near solution; that all that was necessary was to know the type of tumor and that experience would soon give us a catalogue of the radiosensitivity of the various types of tumors in the different parts of the body. This latter is a pretty well known fact, and it is also well recognized that it is all important to know the type of tumor in each case, because of this variation in radiosensitivity, otherwise the use of radiant light may be useless, or detrimental as will be pointed out.

Again, however, we find that the prob-

lem is not solved, for other factors come in to make the solution more difficult. Not only is there a variation in the radiosensitivity of different types of tumors but in the same tumor some elements are highly sensitive while others are highly resistant, which is also true of normal tissues". In cancer nodules of the skin radiated with dosage up to 10% in excess of an erythema dose, some were apparently cured, some regressed and promptly returned, others showed no effect. Further, all tissues, both tumor and normal are capable of developing an immunity to radiant light. Nor are these facts bad as they are, the worst of the story. Excision, years afterwards, of some of the "healed" skin tumors reported above, showed, on examination, the presence of living tumor cells". So the doubt arises as to whether any tumors are ever completely killed by radiant light. Is it not the truth of the matter probably that in supposed cures what has really happened is that part of the tumor is killed, but some of it merely becomes inactive which state may last for years. Following radiation any tumor decreases in size. This is due partly to the destruction of part of the tumor, and to the effect of the radiation on other tissues. Following this reduction the tumor either reappears or not. If it does not reappear it is counted as cured, when as a matter of fact it may be like Frederick Barbarossa, not dead but sleeping and will awaken later, as many of them do, when the appropriate stimulus is present. Fortunately sometimes this does not happen during the life time of the patient.

There are other phases of this question which we left behind sometime ago. What has become of that 60% of radiant light which was deflected and absorbed by the tissues? What has been the effect of radiation on other tissues while we were endeavoring to kill the tumor? Some of them are killed. Some normal tissues are no more radio resistant, if as much so, than some cells at least of a given tumor, and since the tissues, if there be any above the tumor, receive more radiation than the tumor the destruction of some of them cannot be avoided. The white cells are infinitely more sensitive to radiation than cancer cells. McCallum<sup>15</sup> states that destroying lymphocytes by X-ray enormously increases the susceptibility to tumor implantation. Radiation causes venous dilatation, disintegration of vessel walls and thrombosis. It also causes fibrosis. In

fact some authorities state that the main beneficial effects of radiation in the treatment of tumors lies in the thrombosis and fibrosis resulting, for, they state the reduction in circulation aids in the destruction of the tumor and reduces its opportunity for further growth and prevents metastases, and the fibrosis tends to encapsulate and sequester the neoplasm. It is for these reasons that many recommend the use of radiation before surgery.

This phenomenon of fibrosis brings up another effect of radiant light on tissues, that is hyperplasia or overgrowth. The overgrowth of tissue due to radiation is never normal, that is it varies in its structure from the hyperplasia of the same tissues due to other causes. This variation may be so extreme as to amount to actual tumor. In the early days of the use of radiant light the technicians and operators of X-ray machines frequently developed cancers which were undoubtedly due to the frequent exposure to the radiant light. Kamuro took soy beans which he soaked and radiated from a Coolidge tube, then planted. They had nodules and cells displasias on the root tips which he interpreted as roentgen tumors. Blacklund<sup>1</sup> reports a case and reviews eleven others in which sarcoma developed following X-ray for tuberculosis of a joint. Goodman and Price<sup>2</sup> report a case of multiple prickle cell epithelioma developing several years after repeated X-ray for psoriasis. There is a strong possibility that some cases reported as recurrences following radiation are in reality secondary tumors caused by the radiation for the cure of the first tumor. Two cases where this was undoubtedly true have come under the observation of the author. One, M. H., white woman, age forty, unmarried, developed a tumor of the left parotid. This was removed surgically and the area radiated for fear that it was not possible to go extensively enough with the surgery. This tumor was one of the mixed type common in this locality and not usually malignant. Two years later a second tumor appeared near the scar of the former operation. This tumor was an adenocarcinoma not resembling any part of the former tumor. The second case, Mrs. W. S., age fifty-two, white, developed a carcinoma in the right breast. This was removed by radical operation and radiated. A year later a carcinoma developed in the left breast. This was also removed by radical operation and radiated. Within the next year some

twelve or fifteen cancer nodules developed in the skin which had been radiated. The fact that the second tumor in the first case was so different from the first precludes the fact that it was a recurrence, and is grounds for strong suspicion that it was due to the radiation. In the second case the second tumor probably, and the third crop certainly were due to radiation. This was proven by the different origin and the absolute indifference of the third crop to radiant light. They were, if anything, stimulated by it.

If we take all the experience and data on hand at the present time with regard to the biological effects of radiant light we find, (1) That radiant light has a powerful effect on animal cells, especially on tissue cells in culture, on the white blood cells, bone marrow, and generative tissues. (2) That this effect is influenced by the age of the cell, the presence and quantity of pigment within the cell and certain unknown factors which probably determine the absorption of the light by the cell. (3) That the effect is manifest by (a) cessation of activity and quiescence of the cell, which may last for years; (b) by death and disintegration of the cells; (c) by hyperplasia of the cells; (d) by dystrophy, and abnormalities in the carrying on of the vital functions. It is in all probability, the stimulating effect of radiant light that makes it valuable in the treatment of certain skin diseases, especially acne, for cultural studies of the skin will show that the microorganisms found in these lesions have not been killed.

That radiant light is a very valuable therapeutic agent there is no question, both for its killing and its stimulating effects. But it should not be used until the exact nature of the tumor or lesion is known, and it should never be used except by skillful, carefully trained operators. Excessive and insufficient radiation are each useless or dangerous. It is a valuable aid in the treatment of cancer but is not a sure cure for any tumor and is valueless in some types of tumor and some instances of any type. It is the only treatment of any value yet found in certain blood diseases. It is to be hoped that future studies will solve the problem still in doubt so that radiant light will give to suffering humanity the valuable blessings it holds in store.

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DISCUSSION: *Dr. E. S. Lain*, Oklahoma City.

The subject which has just been presented by Dr. Turley is a timely one—one which should be discussed more frequently. He has well presented the subject of histologic reaction of radiated tissue, normal and pathologic. I want to compliment him upon that part of his presentation. I have known Dr. Turley for many years and esteem him as my personal friend. As a pathologist he has no peer in Oklahoma. However, I am compelled to disagree with some of his deductions or clinical judgments concerning the therapeutic values of radiation, which includes both X-ray and radium in certain pathologic conditions.

For statistics upon radiation treatment and conclusions of others, he cites thirteen references. Two of his references are standard textbooks. Two are well-known medical authorities who live in the United States, though nine were selected from European countries. The European authorities quoted, who appear discouraged with radiation treatment in malignancies, were evidently selected from those who were either biased in their opinions or were using antedated and inadequate X-ray equipment, and drew their conclusions from a very limited number of cases treated.

I had the privilege of visiting the X-ray and radium laboratories of many European clinics during the year 1930, and observed that most of them were—on account of economic conditions—sadly lacking in modern X-ray machines and an adequate supply of radium. Therefore, I am convinced that American radiologists,

during the past ten or fifteen years, have far excelled European radiologists, both in improved technique and therapeutic results.

One of the authorities from which he quoted namely, Giordano, "ridiculed the treatment of lingual and oral carcinoma by radium and X-ray." Dr. Turley failed to tell you that this surgeon also does not believe in diagnostic biopsy in malignancy of the oral cavity.

Dr. Turley expresses a personal opinion that radiation treatment of malignancies may hasten or even cause metatasis. Dr. Francis Carter Wood of Columbia University, from whom the essayist quotes extensively upon the effect of radiation on normal and pathological tissue, also adds within the same discussion (*Journal of the American Medical Association*, March 9, 1929), the following:

"There is still much discussion as to the stimulating power of very low doses of radiation and the question cannot as yet be finally settled. One moot point, however, has been determined and that is that radiation of any type does not tend to spread a cancer or cause metastasis.

"Clinicians are often misled by observing unexpected metastases in irradiated patients, but this means only that the patient's life has been so prolonged by the treatment that sufficient time has elapsed to permit extensive or unusual metastasis."

Dr. George W. Crile of the Cleveland Clinic Foundation declares in the *Radiological Review*, August, 1932; "Portmann, by an extensive statistical study of the comparative results of operations for cancer of the breast with postoperative and without postoperative radiation, has convinced us that: (1) the average natural duration of life for a patient with carcinoma of the breast is three years; (2) as a result of operation, about 38 per cent will be free from the disease for the natural duration of life and the average survivals for five years will be about 30 per cent; (3) intensive cross-fire, postoperative radiation is harmful but as the result of superficial doses at least 10 per cent more patients may be expected to survive for five years, than among the nonradiated cases; (4) gratifying results may be obtained from radiation in some of the hopelessly advanced cases of carcinoma of the breast."

I might also quote similar favorable

opinions upon radiation treatment in malignancies from Dr. William W. Healy of Memorial Cancer Hospital, New York City; Dr. Max Cutler, formerly of Memorial Cancer Hospital, New York City, but more recently head of the tumor clinic of Michael Reese Hospital, Chicago, and Edward Hines Junior Center, Hines, Illinois, and many other American surgeons of wide experience though time will not permit.

In relating case history No. 1, Miss M. H., Dr. Turley expresses an opinion as follows "The fact that the second tumor in the first case was so different from the first precludes the fact that it was a recurrence, and is grounds for strong suspicion that it was due to the radiation."

May I remind him that the records in this case, both from St. Anthony's Hospital and the Lain-Roland Clinic, show that this patient had been operated upon the second time and a laboratory diagnosis of adenocarcinoma of the parotid gland had been made long before she received her first X-ray or radium treatment. Therefore his conclusions are erroneous.

Dr. James Ewing has very wisely called our attention to the capriciousness and the high percentage of malignancy of tumors of the parotid gland, and concludes that: "All such tumors should be heavily radiated, after which many disappear, and the others may then be subjected to interstitial radiation or to careful surgical removal."

Our most experienced and qualified medical authorities now agree that only with the harmonious cooperation of the surgeon, the internist, the pathologist and the radiologist in all serious cases of cancer can we hope to bring about the largest number of successful cures.

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*Dr. Ralph Myers, Oklahoma City.*

As far as the subject of radiant light, that name should be applied to that portion of the rays which impress the retina, and this should properly be called radiant energy. I want to speak a little about these two cases Dr. Turley mentioned and I want to bring out that these mixed tumors do sometimes recur. I have seen a good many recurrences, just as he says, and it may be several years after they have been removed. The next time they recur much more quickly. They keep growing more and more, and in this one where there were so many recurrences in the breast,

in these cases metastasis is very common and it is ridiculous to assume that X-ray caused it. We don't get cancer from a series of treatments wisely given; it is only after repeated insult to the skin over a long period of time that we get them. Sometimes where you don't know the exact nature of a tumor and you can't take a specimen a lot of times, then you have to use your best judgment and go ahead and treat it. Lots of times you get amazing results. There are other times when X-ray will tell you the type of tumor you have. You know you can't get a specimen safely and you go ahead and treat it and you get a very good cure. When you get a good response to the radiation treatment of a tumor that was suspicious, then you pretty nearly have your diagnosis.

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*Dr. Turley:* I am very glad that I waked up this section. Some things were said. I said to Dr. Lain before he came up here he looked as if he were going to present a case in court. I confidently believe he should have been a lawyer and not a physician.

I only want to say that attempting to impinge upon the solidity of recognized authorities, whether European or American or anyone else, is not discussing the problems we are meeting. I read the whole of all the articles. How would I know which to light on if I had not read them? I said I was presenting the consensus of opinions of authorities over the world. The shoemaker ought to stick to his last. So far as Dr. Lain's trying to state that my authorities landed with Noah in his ark, I can show him a case where there was metastasis in 1932, with the radiation by the latest type of apparatus that could be bought by the best workers in that line. We see not one case or two cases, but thousands of cases where there is metastasis during the course of radiation treatment. My point remains, the point of variability of sensitivity to radiant light. I agree with Dr. Myers this should not be called radiant light; it should be called radiant energy, but I did not think this audience would recognize that. I recognize that this should be called radiant energy and I accept the amendment. In the fact of variability of sensitivity of radiant light, I tried to bring out the factor which probably explained the response of this tumor and the response of the same tumor under a different radiation. These facts I have given are up to the minute



observations from this country as well as abroad. I also gave some experiments with some things, root tips and infected eggs and such, carried on in this country as well as abroad. So I maintain that my points are still good and if they are not good that is yet to be proven. I stated that there was a great variability of opinions, that there is no one thing about which there is a greater diversity of opinion than radiant light in various types of lesions. Also, as Dr. Lain says, in the treatment of tuberculosis we have not shown that the tuberculosis bacilli are killed by radiant light.

*Dr. Myers:*

I quite agree with Dr. Lane. The shoemaker should stick to his last; his paper proved it.

In the first place he has headed his paper with an improper title. Light refers to those wave lengths which stimulate the retina and not to the X-rays or radium rays. Radiant does call to mind radioactive matter, but it should not be used in connection with light. A more proper title would have been "The Biological Affects of Radiant Energy."

Unfortunately in his anxiety to traverse an unknown sea he has let his foot slip rather badly in his own field. It is common knowledge among those dealing very much with malignancies that mixed tumors of the salivary gland may seem quite innocent at first, but they are very prone to recur following surgical removal and to gradually become more and more malignant until they exhibit full-fledged malignancy, such as in the case which Dr. Turley cited. In the beginning there are many elements in the tumor, but as they become more and more malignant the epithelial portion comes to the forefront.

I must also take exception to his second case of malignancy supposedly due to X-ray treatment. Skin recurrences are seen all too frequently following breast amputations, both when postoperative radiation treatment has been applied and when not. It seems ridiculous to me to assume that these skin nodules which he speaks of were anything else than a recurrence of the original tumor.

Radiation treatment very rarely, if ever, causes malignancy when properly applied and when there are proper intervals between each course of treatment. The cases in which malignancy has occurred as a re-

sult of radiation have been where a constant insult to the skin has occurred over a long period of time, such as in the case of early workers in the X-ray field.

Dr. Turley stated that one should have a microscopic diagnosis from a biopsy section before anyone should venture to institute radiation therapy. I quite agree that we should have such a diagnosis whenever it does not appear that it would be detrimental to the best interests of the patient to get a biopsy specimen. However, there are many cases when it is not feasible and sometimes when it is impossible to do this. Furthermore, there are certain cases in which radiation treatment serves as an all important aid in making the diagnosis. Dr. Ewing's tumor is a very good example of this. There are quite a few cases on record which have been erroneously diagnosed as chronic osteomyelitis by the pathologist. In some of these cases X-ray treatment has shown what the true diagnosis was. Many other types of cases could be cited where radiation treatment should be given as an aid in clearing up the diagnosis, whether or not it has been possible to get a biopsy specimen.

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CURRENT QUESTIONS IN PROCTOLOGY:  
CHAIRMAN'S ADDRESS

Curtice Rosser, Dallas Texas (Journal A. M. A., Sept. 30, 1933), in his article entitled "Current Questions in Proctology," points out that the present-day proctologist excises a fistulous tract, whereas two decades ago he incised it and three decades ago used a seton or caustic, without special thought of the fact that Hippocrates presented a choice of the knife, the horse-hair seton or the escharotic covered tent for the identical lesion. During our own lifetime the angi-tribe, the cautery and the scalpel have each crossed the stage as principal actors in the operation of hemorrhoidectomy as they have crossed and recrossed it during the centuries since Hippocrates described the destruction of piles by pressure, by fire and by cutting. Proctology has been in recent years reclaimed to orthodox medicine through increasing realization of its import in the general medical scheme. Accurate diagnosis became essential and the Hanes position, electrically lighted colonoscope and the perfected barium ray have made it possible. Proctologic surgery has thus rightly concerned itself with the ceremonies associated with the art of surgery, but its futile progress will be indexed by its solution of questions connected with the science as well as the craft of our domain. Any number of interesting problems and adjustments remain for systematic investigation. The author discusses several phases of comparative surgical pathology applicable to this field, and takes into consideration the venereal problem as it involves the lower part of the intestine.

## IMPRESSIONS AFTER TEN YEARS' USE OF RADIUM IN GYNECOLOGICAL CONDITIONS\*

PAT FITE, M.D., F.A.C.S.  
MUSKOGEE

After following the reports on the use of radium in gynecological conditions as used by Clark, Kelly, Burnham, Miller and others, we began the use of it in 1922.

It is not intended in this treatise to discuss other than quite superficially, the physics nor the technique of the application of radium but rather the conclusions reached from its use over something like ten years and a half. A radium salt representing fifty milligrams of radium with brass screening was used throughout. Occasionally some additional screening was used. We have used it in the following conditions:

1. Carcinoma of the cervix.
2. Carcinoma of the fundus uteri.
3. Bleeding at the menopause.
4. Menorrhagia and metrorrhagia from other causes of a questionable functional type.
5. Fibroid tumors of the uterus.
6. Uterine polyp.
7. Endocervicitis.
8. Carcinoma of the urethra and vaginal wall.

1. *Carcinoma of the cervix.* Because of the shape of the cervix and its inaccessibility to other forms of radiation, radium applicators are peculiarly adaptable to this condition. In our experience between 90 and 95 per cent of the cases of carcinoma of the cervix coming to us are either inoperable or borderline cases. The Memorial Hospital in New York reports 80 to 85 per cent. Prior to the use of radium, in these cases our treatment was very unsatisfactory. In the majority we could do nothing and there was a high percentage of recurrence in those operated, altogether a very discouraging situation. Since the use of radium we have been able to get five year cures in approximately 25 per cent of these cases and in an additional 60 per cent to get rather marked alleviation of their symptoms especially as to bleeding, pain and sloughing, for which the patients are quite thankful. The plain-

ly operative cases that have come to us we have treated with radium and these have practically all resulted in five year cures. The more rapidly growing (the more nearly embryonic) type of cell, the more rapid the subsidence of the growth. The inverting type of growth does not respond quite as rapidly as a rule as the fungating form. The dosage has been as a rule not less than 3000 milligram hours, usually at one sitting. Occasionally this has been increased in extensive growths and with additional screening, as high as 6000 milligram hours. In our experience the radio sensitive growths show marked recession within three weeks and practical disappearance in from six to eight weeks. In those cases in which recession does not take place within the first three or four weeks, further radiation has been of very little service.

As a matter of routine all these cases have been given deep x-ray therapy to the pelvis as an adjunct. The first case, a frankly inoperable one, which was treated in the early part of 1922, is still living and clinically well. An occasional troublesome aftermath following these cervical cases is a pyometra which results from contracture of the scar tissue in the cervix following the disappearance of the carcinoma. This should be watched for in all cases in which the cervical canal tends to close down and can be relieved by repeated dilatation of the canal. There is also an occasional cystitis or proctitis resulting from heavy radiation which may persist in varying degree for periods up to six months. In our experience this complication has never been of more than minor importance.

2. *Carcinoma of the fundus uteri.* Our attitude toward carcinoma of the fundus uteri has been that this is an operable condition in the majority of cases and should be so treated except in frankly inoperable situations and it is in this last type only that we use radium and that with the idea of palliation only. In this connection we feel that all cases of irregular bleeding from whatever cause, particularly at or after the menopause, should have a diagnostic curettage before any form of treatment is undertaken as occasionally a carcinoma of the fundus will be discovered in this way. It is our rule to have a pathological examination of all uterine scrapings.

3. *Bleeding at the menopause.* This condition is admirably suited to radium treat-

\*Read before the Section on Surgery, Oklahoma State Medical Association, Oklahoma City, May 15-17, 1933.



ment and it constitutes the easiest and most certain treatment of the condition and can be utilized with safety in the advanced stage of secondary anemia often seen in these cases and the result is almost 100 per cent successful. These cases should always be curetted at the time the radium is introduced because of the possibility of malignancy. The amount of radiation administered is 1500 milligram hours as this almost always suffices to produce a menopause and is just short of a dose that will produce superficial necrosis. There is usually a rather thin leukorrhea for several months afterwards which gradually subsides. They may menstruate for a month or two before finally stopping.

4. *Menorrhagia and metrorrhagia from other causes of a questionable functional type.* Some of the most difficult cases that we have had to treat have been in women in the twenties and thirties with excessive menstruation and for which no cause could be found other than a presumed functional disturbance. These often come with advanced secondary anemias and do not respond to the ordinary glandular therapy nor to medical treatment of their anemia. In such cases we generally do a diagnostic curettage which often discloses a marked hypertrophic endometritis. At this time the uterine cavity is treated with carbolic acid followed by alcohol. This alone usually limits their bleeding for a month or two. Should it occur after that we have often used from 300 to 600 milligram hours of radium in the uterine cavity from which it is expected to produce a temporary amenorrhea rarely extending over more than two or three months. After treating a fair number of these cases in this way with rather indifferent results and comparing those with and without transfusion in which advanced secondary anemias were present, the results have shown that one or more transfusions have been of more benefit in stopping the bleeding than any other therapeutic measure as it seems that when a marked anemia is present a vicious circle is set up which is best broken by the transfusion. Occasionally an obstinate case of this type will occur in cases of pulmonary tuberculosis in which the loss of blood is detrimental to the cure of the disease and in these cases we do not hesitate to give a larger dose, even to the point of producing an artificial menopause. Another type is that occasionally seen in younger women following a bi-

lateral salpingo-oophorectomy in which obstinate bleeding comes on within a few months. These we have treated with curettage and application of 1200 to 1500 milligram hours of radium with success in all cases.

5. *Fibroid tumors of the uterus.* The intramural type of fibroid is probably best adapted to this form of treatment, the subserous and sub-mucous varieties less so. For the moderate sized fibroid near or after the menopause, 1500 milligram hours of radium applied within the uterine cavity will cause a recession and practical disappearance of the growth in 75 to 80 per cent of the cases. The rate of disappearance is quite variable, sometimes extending over a period of a year or more, but as a rule within six months, and it is generally understood that degenerative fibroids should not be treated with radium.

Once or twice we have had occasion because of the extreme condition of anemia in the case of sub-mucous degenerative fibroids in which we were unable to obtain donors and in whom removal of the tumor would have been homicidal, to resort to breaking into the degenerative mass from within the uterine cavity, establishing good drainage, and to introduce the radium directly into the center of the degenerative tumor. In these cases the patients have recovered, the bleeding has stopped and the tumor has almost entirely disappeared. One such case has been treated within the past six months with complete recovery. The dosage in these cases is the same as used in bleeding of the menopause, 1500 milligram hours. We do not advise radiation of fibroids in younger women because the necessary dose will produce an artificial menopause. For these we resort either to myomectomy or hysterectomy with preservation of the ovaries. In a few cases with advanced anemia from bleeding we have had recourse to smaller doses of radium to control the bleeding and in some cases of tuberculosis associated with a bleeding fibroid we have not hesitated to produce an artificial menopause.

6. *Uterine Polyp.* Uterine polyps are treated by surgical removal. If in older women, we apply radium to the source of the polyp for 600 milligram hours to prevent recurrence. In younger women this is not done unless recurrence takes place and at the second operation radium is applied for about 300 milligram hours. This

has been quite successful in the prevention of recurrence of polyps.

7. *Endocervicitis*. We have applied radiation in obstinate cases of endocervicitis in the past in a few women of middle life or past with only fair results. We prefer to use cauterization or some form of surgical procedure as our results have been much better.

8. *Carcinoma of the urethra and vaginal wall*. Carcinoma of the urethra and vaginal wall except as secondary growths are quite rare and the only ones that were primary have been treated with radium along the lines of the same dosage as is used on superficial epitheliomas, but with rather discouraging results.

Uterine bleeding in one way or another constitutes a fairly large percentage of all gynecological conditions. Any one who undertakes to adequately treat this condition must of necessity advise radiation with considerable frequency and after ten years of experience in treatment of these conditions in which radium is indicated, the speaker would be at a loss to know how to adequately and honestly treat many of these cases were not this type of therapy available. It is surprising how little understanding many men of large surgical experience have about the indications and results from radiation in gynecological conditions. Some are even avowedly opposed to its use under any condition. Another reason is, to emphasize the fact, that many of these cases with carcinomata of the uterus, particularly of the cervix where diagnosis can be easily made at a relatively early date, have never been examined but have been treated for months by medication, the patient finally seeking radiation of her own accord. There seems to be a certain reticence on the part of many women to report a condition until it is very evident that something is radically wrong. From these of course the medical profession is exonerated.

The mortality of radiation is practically nil. The hospitalization is brief and where indicated its use is equal to or superior to surgery and it is economically possible for many people for whom other forms of treatment are prohibitive on account of the cost alone.

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DISCUSSION: *Dr. John F. Kuhn, Oklahoma City.*

I am scarcely prepared to discuss this

paper. I am sorry I did not get to read it before Dr. Fite read it here, so I will have to beg your indulgence just a little bit. I do not know how I can directly and definitely discuss it because I just heard the last part; I got in just as he was discussing the matter of functional bleeding of the uterus. Anything that has gone before that I don't know.

I am going to take exception to the statement that he made that he would use radium in functional bleeding of the uterus, because it is a well known fact that hypertrophy of the endometrium is an unusual condition and is not the result of functional disorder. Hyperplasia of the endometrium is a common thing and this is distinctly the result of some ovarian function in which the chain of endocrine glands are generally involved. I like to consider two distinct glands as a unit, and therefore I speak of the pituitary-ovarian chain, not disregarding the rest of the endocrine system, particularly the thyroid. Now then, the proper treatment in this case is not a radiation. We have here ovaries that need the proper kind of stimulant, that should not be abused, that should be stimulated in the proper direction. This type is the type in which proper and careful curettement should be done repeatedly until there has been a proper stimulus to the ovary and proper resume of the endocrine chain. This is the thing that occurs in young women in the adolescent years, probably up to and occasionally in the early twenties. These patients must be kept under careful observation throughout adolescence and maturity and under proper, careful, general medication. It is true that frequently these girls will require repeated transfusions and it has been our practice for years past to use intramuscular transfusions for two reasons, first, to aid in the stoppage of hemorrhage and to aid in stimulating the harmonic function, rather than one massive intravenous injection. I stop the hemorrhage when it has been excessive by preliminary curettage. We put the patient at absolute rest for forty-eight to seventy-two hours and then we regulate a very, very mild amount of exercise if the bleeding has stopped and then we put them on the proper functional treatment. Now I think that is as far as I ought to go on that particular subject. Dr. Fite mentioned it as only one of a large group of treatments.

Now, the use of radium in the past few years in the hands of really good men who



know how to use radium has practically put the scalpel on the shelf as far as carcinoma is concerned, carcinoma of the uterus, and particularly now in the early phases it is definitely cureable by the proper use of radium. The unfortunate part of it is that we see these patients so extremely late that they are often in the hopeless, far advanced type. Primarily the treatment should be X-ray in order to block out, so to speak, the lymphatic areas and after the initial result with properly given deep therapy, then we should use radium. I should like to qualify the statement regarding proper deep X-ray therapy. Remember I advocate the combination in these late stages. I think that just as soon as the profession as a whole and the X-ray therapists particularly, come to the realization that the normal tissue cells are rather easily and quickly sensitized, then we will make a little further progress. First of all each patient should be properly and carefully studied. For this purpose the patient should be hospitalized, careful blood studies made, and blood transfusions given if the blood stream is very low, and the patient kept at absolute rest. An estimate should be made as to the extreme doses she can stand in order not to test her with small doses. Small doses of deep X-ray therapy will do nothing but sensitize the structures so that you can't give the big doses, therefore it should be just as extreme as possible to give this patient. The tumor cells very rapidly become radio-resistant and the normal cells become radio-sensitive and it is necessary to complete your treatment in a short time. The patient can rarely stand three extreme series without being harmed. The initial series should be as extreme as they can stand and the next treatment should be radium, unless it be so far advanced that you cannot give radium. Now then, so far as degenerative fibroids are concerned, here again I wish to take issue with the essayist. In fibroids in the process of degeneration, the degeneration is either the result of infection or some change in the character of the tumor itself. If there are degenerated cells with the growth it would be foolhardy to introduce radium unless you were sure that there was an absence of toxins. We have had some very unfortunate instances with toxemia of the patient in which it was impossible to determine that they had infections. We have had very little success in causing fibroids to disappear with the use of radium and I still believe that in the

presence of fibroids with considerable hemorrhage in women past middle life or past the childbearing age, that the proper thing is to prepare her for operation and leave off the radium.

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*Dr. J. F. Percy, Los Angeles.*

I am very much interested in Dr. Fite's paper. I hear a great many of them and I have my opinion about them. Anyone that says that you can't cure carcinoma of the cervix with radium is going far afield, because they are cured. But the thing that my radiologist friends don't say anything about and that Dr. Fite hasn't said anything about and all the radiologists in this country so far as I have been able to learn say nothing about, is the morbidity they get following the use of radium in the cervix. Now that is a very serious question and we also say, and the radiologists say that if a man knows how to use it you won't have anything of that kind, and I want to say that isn't true. You send in each shot and you don't know what it is going to do, and as mentioned in the doctor's paper you may get your effects long after that. You may get your erythema from the radium 18 months afterwards, you don't know how long, you may get it sometimes many years after, even fifteen years afterwards. Now as I have said, I see a great many of these cases and we have a very well known and active radiologist on our cancer commission at the County Hospital in Los Angeles and we usually don't speak very kindly to each other during our work on the commission but we have always sworn that we would forget it by the time the sun went down, but we have seen a lot of bad, bad results and I get them after these gentlemen get through with them. I want to tell you if you have applied radium and X-ray you have shot your long bow. If they start in again they are as a rule, gone. To illustrate, last March a year ago we had a patient come in with carcinoma of the cervix, an especially intelligent woman for that kind of clinic. I didn't believe she had carcinoma of the cervix and my radiological colleague thought she had, so we took a biopsy and they said it was carcinoma, class three. He said to me, "Percy, I wish you would let me have this case. Give me one that I can cure because I get so many of these bad ones." I said, "all right, take her." The doctor I am criticizing is a good man but he believes in seven thousand milligram hours. He doesn't give

fifteen hundred or two thousand or three thousand. And then he gives the deep therapy afterwards and they are sicker than dogs afterwards; you never can get them to consent to having anything like that again. In October this woman came back and she had a frozen pelvis. She really showed she had cancer then. There was no question about the diagnosis. She begged me to operate, I said, "if I operate everything will slough and all your inwards will be out through your vagina, and it isn't a very pleasant prospect for you and it won't do any good," but she begged me to operate and she came back and begged. I opened her abdomen, dilated the vagina with my vaginal dilator and put in the water cooled speculum and with my assistant holding the uterus shoved that cautery up to the fundus and cooked that whole field until he couldn't stand it any longer with medium weight rubber gloves on. It usually takes twenty to thirty or forty minutes until he begins to dance on account of the heat coming through the uterus and then he directs me to shove the cold-tip cautery out into the broad ligaments. Two weeks later my resident telephoned me and said, "I wish you would come over. The nurse found practically all the small intestines of Mrs. Blank out in the bed and I want you to come over." I said, "no, I won't. You scrub up your own hands and put on your rubber gloves and put your clean towels around her and don't put any antiseptic on the vaginal walls or intestine, but pack that intestine up the vagina and hold it there with iodoform gauze. Be careful not to shove the iodoform gauze up to her diaphragm, and then sew up the vulva to keep that iodoform in there. Leave a space about one-half to three-quarters of an inch below for drainage." Why didn't I go over there? Because I have learned one thing that I don't think our radiological friends are on to—you can't infect these cases with a cautery. I have tried to take out some of those rectums due to radical burns. We had four new cases in one day in our clinic, and in trying to take out these rectums by the Miles operation with my cautery, sometimes because of the friability and fragility of these tissues I have shoved my fingers through and immediately the belly would smell like a country backhouse. I closed my first case up and the next morning she complained bitterly because she hadn't had her breakfast. She had no qualm of any kind, no elevation of temperature, no pulse eleva-

tion or anything, and I have done that a number of times since and nothing happens to them in the way of peritonitis. Another thing, talking about morbidity, if I should mention the name of a certain radiologist all of you would know him. He is known everywhere in this country and has an international reputation. He is known everywhere for this question of treating fibroids but he treated a fibroid with all his skill and what happened? He burned off the whole lower part of her abdomen and it went through the abdominal walls and fortunately for this woman the small intestine involved was low down. She was in our hospital and she was one of our show cases. I used to take visitors to see her. She had five holes in the small intestine and the small intestine had opened up. There was the mucous membrane with its peristalsis and she had a hole above the pubes about one inch in diameter and you would suck out with a catheter and syringe her urine, and this man tried to sew her up. He tried to do a plastic and pull that together, and you can't do a plastic on that kind of a patient. Your radium and X-ray won't let your tissues repair. There is a way of repairing it but I won't go into that. I am going to stick to this morbidity side of it. In Europe they are beginning to talk about the morbidity in their journals. Ninety-five per cent of everything I see in the way of cancer has had X-ray and radium and out of that mess I get twenty per cent that live over the five-year period without morbidity because the cautery destroyed the progressive, chronic condition that is the result of X-ray burns. The two last reports of the Royal Radium Commission of England, I have them with me and those of you who want to see them can see them, say it is not settled yet as to the value of X-ray and radium and they are not saying anything about it and make no claims for it yet. Everywhere in the journals you see these marvelous reports of what they are doing with radium and X-ray in cancer of the cervix. Now in contrast with this, let me relate something.

Years ago when A. J. Ochsner, whom so many of you know, came down to the operating room of the Presbyterian Hospital and found a note pinned to the sheet of the operating table in Dr. Sims' handwriting notifying him his services would not be required any longer after that clinic, that was the foundation stone of that marvelous clinic that Ochsner built



up in the Augustana Hospital. One of the first cases that came to him was a woman who had been put through all the clinics in the country and pronounced hopeless, but with that clear vision based on thinking in relationship to his case, he told her, "you come back the next clinic day and I will see if I can't do something for you." He bought a charcoal stove and bought two large soldering irons about two and one-half inches in diameter and when she came back the night before she was given the ordinary care, and in the clinic the next morning he put that woman under ether and dilated the vagina with Sims' retracters, and when this cautery, these soldering irons in this charcoal stove were at a dark cherry red he took one of those irons out and shoved it into the vagina to the vault as far as he could send it and he left it there until it stopped simmering, and when it stopped simmering he took it out and repeated the process with the second iron. Six months before Ochsner died I made rounds with him at the Augustana Hospital and I said to him, "what became of that woman you treated with the soldering iron and the charcoal stove when you first established your clinic?" He laughed and said, "oh the anniversary of the day I operated her she returned for seventeen years and after the seventeenth year I lost track of her, and she was perfectly well."

Now we have gotten so terribly scientific that we have gone off after an agent that we know nothing about. I heard one of the best pathologists on the coast say in a meeting not long ago that if radium and X-ray had never been used in cancer the sum total so far as this agent is concerned would have been benefited. I remember my first statement that there are cases that are cured, but I want you to understand that there are other methods that have back of them centuries and centuries of experience. We have found out how to use them. The old fellows back there in the fourteenth and fifteenth centuries knew how to use them. A lot of our surgeons have been overwhelmed and overshadowed with X-ray and radium. They used to in late cases with hemorrhage and stink and cachexia shove in these soldering irons in the vagina with the idea of palliation and some of them would get well. It is a more or less moral obligation not to use the X-ray and radium. These patients will live longer without than with it, and in attestation to that

Ochsner left a record of sixty-two per cent of proven cases of carcinoma that lived over the five-year period without morbidity after treatment with the cautery.

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*Dr. E. S. Lain, Oklahoma City.*

This reminds me of the debates we used to have where we would debate on anything. When we have reached a certain age and have been working for a number of years, then there is no tool but that with which we have been working. It seems like ego on my part to discuss the discourse of so eminent a man as Dr. Percy. He has referred to one particular method of treatment which has blessed the world, but I must say that we have not observed here the pathological and clinical effects of radium of which he speaks and they seem to be having bad results in that particular locality, although I am sure they are good men out there. He is speaking, I assume, of cases of surgery and everything else we have today. I know of but few men who give seven thousand milligram hours to the cervix. The average number is two to four thousand. I know we used to years ago, and I am afraid you are quoting old statistics. I have read the paragraph to which he refers on the Commission. It is my experience that radiation therapy has so far gone through periods of enthusiasm and periods of depression, nevertheless, if used by experienced men, X-ray and radium have no rival in the treatment today of malignant diseases.

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*Dr. R. L. Murdock, Oklahoma City.*

Dr. Fite has said that proctitis sometimes comes on eighteen months after radiation. In just the last year our radiologists are getting where they apply radium in such a manner that we do not get them much any more. There are some horrible examples however. Just recently I happened to have had a case which was the worst in its nature I have ever seen, and by coincidence this woman in November of 1932, had radium applied to the cervix in Los Angeles. She got to our clinic in Oklahoma City on November 29, and was having lots of anal and rectal pain then. The cervix looked very good according to our gynecology man. She went along with a lot of rectal pain. The proctoscope showed minute red patches. She passed a little blood now and then and the rectal wall would bleed in slight touch. She went along that way for several

months in which we saw her a number of times and she had nothing but this congestion, so to speak, of the rectal wall until when examined on the 16th of March, which would have been about five months after her application of radium in Los Angeles, she had a smooth constriction of the rectum, a uniform encroachment on the lumen of the rectum very similar to our chronic inflammatory strictures of the rectum. But it continued to block on down until she had to have a colostomy for extreme obstruction on April 9. That is the only case that we had where the cancer was eradicated and with this fibrosis and peri-rectal fixation. Inside her abdomen on colostomy there was no glandular involvement; there was nothing but a fibrosis and fixation about the rectum about the level of the cervix. That is just one case. The Mayo Clinic reported their experience over a period of nine years and in all cases of application of radium to the cervix, over two thousand, they had only forty-eight cases in which there was any visible sign of proctoscope in the rectum; of those only twelve had any ulceration at all, so the conclusion is that radium is being used by people who are familiar with it. It is justified and indicated to use it, and with the exception of a few horrible examples rectal symptoms are not being severe.

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*Dr. R. L. Meyer, Oklahoma City.*

I want to say something in support of what Dr. Fite said about menorrhagia. I have seen many cases in which curettement after curettement was done and the hemorrhage stopped only temporarily, on the other hand with the application of radium in a large percentage of cases with small doses, the result has been accomplished and accomplished fairly quickly. In other methods there is usually more or less invalidism over a considerable period of time, and certainly radiation in my experience in such cases has been very effective. Occasionally you have to see it a second time. In regard to fibroids, I am surprised that Dr. Kuhn has not seen better results. If you use radium you have to be more particular about the question of infection. X-ray probably is a little safer. I have used it in a good many cases now and have had no untoward results and in every case the fibroid has gradually shrunk down until in six months or a year it was either barely palpable or not palpable at all. I believe radiation is more

applicable in a greater percentage of cases than surgery is. To touch another point, I hardly think anyone really proves anything by taking unusual examples of what X-ray and radium does. Personally I have seen very few of such cases. There is no doubt but radium and X-ray can react on some peculiar condition and get results you would not ordinarily experience. When radium and X-ray are used intelligently and carefully the untoward results you are going to get will be very few in proportion to the palliation and cure you will get which could not be obtained by any other method. I think one should be always careful not to try and condemn anything by picking out horrible examples where for some reason there was an unexpected result. We do get proctitis in cervical carcinomas; occasionally we do get some result, but I believe these results are justified in the face of the cures we are getting all over the country.

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*Dr. Fite:*

Concerning the treatment of these cases of functional bleeding, we do not use it except in the late twenties and thirties and only after we have tried other measures first, and radium is not always successful then, but it often is. We have used it in cases of tuberculosis in which we wished to produce menopause. As to Dr. Percy's cautery, I have never used it so I can't compare it at all with radium. So far as I am concerned, radium has been a God-send to me in the treatment of carcinoma of the cervix. I have visited a great many places in this world and no places where everybody believed the same way. With reference to radium in degenerated cases of fibroid, I have only used it in two cases in which we could not find a donor and in which to my surprise the fibroid entirely disappeared within about three months. We broke into the fibroid so that there was adequate drainage from the tumor. You can discuss these things interminably, but in the discussion of proctitis and inflammation of the bladder that sometimes results, we have had more trouble with cystitis than proctitis and it is sometimes fairly troublesome. I think it is because you can pack the rectum further away from the radium than you can the bladder. All of these cases have cleared up in a few months and we have never had any permanent untoward results.



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Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application. It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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### EDITORIAL

As I assume the duties of Secretary-Treasurer-Editor it is with many misgivings, for the work is largely new to me, and it will indeed be difficult to maintain the high standard set by the late Dr. Thompson, who developed such wonderful efficiency in his twenty-four years of service.

It will be my purpose to serve organized medicine in Oklahoma to the very best of my ability. I realize that in the Journal I speak for all the members of the State Association, and when I make mistakes I will welcome any constructive criticism you may care to offer. Of one thing you may be sure, that I will always be squarely behind the profession in keeping our

position clean, clear, ethical and free from any taint of compromise.

Your co-operation and suggestions are solicited and with this help I pledge my best effort to maintain this office and the Journal on the high plane it has attained under the direction of my distinguished predecessor.

—L. S. WILLOUR.

### RECOMMENDATION FOR RELIEF FOR THE INDIGENT SICK

At the request of Governor Murray a meeting of the Council of the State Medical Association was held at Oklahoma City, October 31, with a representative of the Governor, Mrs. E. McKinnon, State Supervisor, Social Service, under the Federal Emergency Relief Administration, present at the meeting. We were asked to set up a schedule of fees that would be paid by the Federal Emergency Relief Association for the care of the indigent sick in the various counties of the State. The following schedule has been submitted, this schedule to be subject to a 50% reduction:

Visits .....	\$ 3.00
Office visits .....	2.00
Obstetrics .....	25.00
Mileage (per mile) .....	1.00

#### Fracture Schedule

Skull .....	50.00
Jaw .....	25.00
Humerus .....	50.00
Radius .....	25.00
Ulna .....	25.00
Radius and Ulna .....	35.00
Pelvis .....	50.00
Femur .....	75.00
Tibia .....	35.00
Fibula .....	20.00
Tibia and Fibula .....	50.00
Fingers .....	10.00
Toes .....	10.00
Clavicle .....	25.00

#### X-Ray

Hands and Feet .....	5.00
Arms and Legs .....	10.00
Hips .....	15.00
Shoulders .....	10.00
Pelvis .....	15.00
Spine—Ap. and Lat. ....	25.00
Chest—for ribs .....	10.00

#### Operative Fees

Laparotomy .....	\$100.00
Brain Injuries .....	100.00
Empyema .....	50.00
Vaginal Drainage .....	50.00

#### Amputations

Major .....	100.00
Minor .....	25.00

#### Anaesthesia

Spinal or General .....	12.50
Tonsillectomy .....	25.00

It was further recommended that this service be rendered only to those registered for relief and as long as they remain on the relief rolls. This schedule and arrangement to exist only during the period of the emergency. That the family physician-patient relation be maintained.

When no physician is especially desired the doctors are to be called in rotation from a prepared roster of the members of the component County Medical Societies, using, of course, the most accessible physician in the rural communities.

The above schedule, with 50% reduction, was made with the approval of the Federal Emergency Relief Association representative and will be forwarded immediately to Washington for final approval.

Of course the Council could not pledge the physicians of the State to do work for the above mentioned fees, however, it appears to be the best deal that can be made and we hope that our action will meet with the unanimous endorsement of the profession and that the doctors, as usual, will carry on and do their part to alleviate the suffering of our indigent sick.

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### THE COUNCIL

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Called meeting of the Council by the President, Dr. T. M. McCarley, at Oklahoma City, October 8, 1933. Present:

Doctors:

T. H. McCarley, President,  
McAlester.  
LeRoy Long, President-Elect,  
Oklahoma City.  
L. S. Willour, McAlester.  
F. M. Adams, Vinita.  
J. S. Fulton, Atoka.  
S. A. McKeel, Ada.  
O. E. Templin, Alva.  
A. B. Chase, Oklahoma City.  
D. Long, Duncan.  
W. A. Howard, Chelsea.

Dr. W. A. Howard was appointed to act as Secretary.

The President appointed the following as auditing committee to audit the books of Dr. C. A. Thompson, Secretary-Treasurer Editor:

Doctors: J. S. Fulton  
S. A. McKeel  
O. E. Templin

Report of the auditing committee was made to the Council as follows:

Dr. Fulton moved that the report as furnished by the certified accountant, Charles A. Wright, be accepted.

Seconded by Dr. A. B. Chase.

Motion carried.

Dr. Templin moved that the Association pay Dr. C. A. Thompson's estate a month's salary for October, 1933. Dr. Adams seconded the motion; carried.

Nominations were in order for Secretary-Treasurer-Editor to fill the unexpired term of Dr. C. A. Thompson, deceased. The chair rules upon section eight of the Constitution and By-Laws as follows: "that this section means unexpired term to end December 31, 1935."

Dr. Fulton nominated Dr. L. S. Willour for Secretary-Treasurer-Editor.

No other nominations being made, Dr. Templin moved that nominations close, and that Dr. L. S. Willour be elected by acclamation. Motion seconded by Dr. Adams; motion carried.

Dr. W. A. Tolleson, Eufaula, was appointed to fill the unexpired term of Dr. L. S. Willour, as Councilor of the Ninth District.

Motion to adjourn by Dr. Templin; seconded by Dr. Fulton; carried.

W. A. HOWARD,  
Acting Secretary.

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### THE HUMAN HEART

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We are under the impression that deaths from heart diseases of all kinds is statistically becoming overloaded. Is this due to more correct diagnosis, or are we terming things heart disease which are something else? There are quite a number of sudden deaths in the world today and most of these are reported as due to heart failure. We have the feeling that a goodly number of such catastrophes should be diagnosed cerebral hemorrhage, all of which leads one to feel that our laws should be fixed, making post-mortems mandatory in all sudden deaths.

—Fred G. Dorwart, M.D.

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### DIABETES MELLITUS

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Of all sneaking diseases, diabetes mellitus leads the field. To reach the age of fifty or thereabouts and have sugar found in your urine must take all the joy out of living. Good-bye biscuits, steaming baked potatoes, rice that does not stick together, baked beans, cooked for twenty-four



hours, corn on the cob, and what not, and when one has to say such good-byes it is most likely felt that the end of living is next door.

Why then can't we, as physicians, make more efforts to secure a better living for the poor old diabetic? Shouldn't the diabetic be taught to so judiciously use insulin that that baked potato can be eaten when he so desires it?

—*Fred G. Dorwart, M.D.*

## DR. C. S. BOBO—A BIOGRAPHY

Doctor C. S. Bobo was born February 29, 1856, in Perkins county, Alabama. While still an infant his father moved into Mississippi, establishing himself on a farm and remaining there until after the Civil war; or, about 1873, when he moved over into Wise County, Texas. Here the doctor worked as a farmer until he left for college which was at Louisville, Kentucky. Graduating with honors from that institution in the year 1881. He then returned to his home and began to practice medicine. Three years later he was married to his present wife who was then Miss Ada Crowe.

During his seventeen years of practice in that community, Doctor Bobo was quite active in the Northwest Texas Medical Society. He served as its president for one term. He was, also, active in the Texas State Medical Association, having a record of missing only two meetings in his seventeen years of connections.

In 1889, Dr. Bobo came to Oklahoma Territory. Settling in Norman, his present home. He soon affiliated with the Oklahoma Territory Medical Association, serving this society in many capacities, but in his outstanding position, as a delegate, he was instrumental in bringing the two Oklahoma groups together. In 1907, Doctor Bobo was elected the president of the Oklahoma State Medical Association, at Shawnee.

Doctor Bobo held the position as Dean of the Medical School at Norman. This position he held up to the time of the consolidation of the departments of medicine of the two schools at The University of Oklahoma and The Epworth University, located at Oklahoma City.

Dr. Bobo has the unique distinction of having signed the diplomas of the first graduating class from the University of Oklahoma Medical School.

Doctor Bobo has been the local surgeon of the Santa Fe for the last thirty-four years and the surgeon for the Oklahoma Railway since its establishment in 1912. He has, also, served as consultant to the Central State Hospital in Norman since its establishment.

He is still an active practitioner at Norman and an ardent member of the County society, and attends the state meetings with great regularity.

## Editorial Notes—Personal and General

DR. AND MRS. N. H. LINDSEY, Pauls Valley, attended the Century of Progress Exposition in October.

DRS. J. L. HOLLAND AND W. D. HAYNIE, Madill and Kingston, respectively, attended the meeting of physicians.

DR. E. P. MILES, Hobart, underwent an operation in the Border-McGregor Hospital in October, and is reported improving.

DRS. WALTER HARDY AND J. LLOYD COX, Ardmore, attended the International Clinics in Cleveland, Ohio, in October.

DR. H. F. VANDEVER, Enid, has returned from Kansas City, where he attended the conference of the Southwest Clinical Association.

DR. F. W. EWING, Muskogee, attended a medical meeting in Kansas City, the latter part of October, and then went fishing for two weeks in Missouri.

DR. AND MRS. J. E. HARBISON, Oklahoma City, have returned from Chicago, where Dr. Harbison attended the meeting of the American College of Surgeons.

DR. G. N. BILBY, Oklahoma City, was designated by Governor Murray as Oklahoma's delegate at the National Child Health Recovery Conference held in Washington.

DR. AND MRS. F. W. BOADWAY, Ardmore, attended the Century of Progress in October. Dr. Boadway also attended the International Clinics in Cleveland, Ohio.

DR. AND MRS. FRANK MCGREGOR, Mangum, have returned from Chicago, where they attended the Century of Progress Exposition and the American Legion National Convention.

DR. W. C. VERNON, Okmulgee, qualified in the preliminary contest of the state bridge matches which was held in Tulsa, October 9th. This entitled Dr. Vernon to enter the semi-final contest which was held October 22nd, in Enid.

PONTOTOC COUNTY MEDICAL SOCIETY held a meeting September 7th. Dr. C. P. Bondurant, Oklahoma City, lectured on "Common Skin Diseases," illustrating with lantern slides. Dr. Dick Lowry, Oklahoma City, also lectured.

MRS. W. T. SANGER, Press Chairman of the Woman's Committee for the meeting of the Southern Medical Association, at Richmond, extends a special invitation to the doctors' wives, and promises a very interesting and entertaining program.

DR. J. A. SMITH, head physician of the Chilocco Indian School, Ponca City, has been transferred to Yakima, Washington, and Dr. Tirador came from the Omaha and Winnebago Indian reservation at Winnebago, Nebraska, to take charge of the Chilocco School.

DR. SAM A. McKEEL, Ada, Councilor Seventh District, Oklahoma State Medical Association, made an official visit to the Seminole County Medical Society in September. He addressed the society on "The Basic Science Medical Law." He was accompanied by Dr. E. A. Canada.

DR. AND MRS. W. ALBERT COOK, Tulsa, have returned from Lake Forest, Illinois, where they have been the guests of their daughter, Mrs. Colin Leiter Campbell and Mr. Campbell. Dr. and Mrs. Cook went to Lake Forest especially to make the acquaintance of their granddaughter, Alison Campbell, who arrived on September 28th.

DR. HENRY TURNER, Oklahoma City, was a guest of the Dallas County Medical Society September 28th, where he spoke on "The Ovary and Its Incretory Interrelationships." He also delivered an address before the Kansas City Southwest Clinical Society at its Fall conference, October 2nd, on "The Clinical Diagnosis and Treatment of Pituitary Syndromes."

#### REPORT OF ANNUAL CONFERENCE OF SECRETARIES

As Dr. W. Albert Cook, Tulsa, was in Chicago at the time of the Secretaries' meeting of the American Medical Association, he was authorized by the Secretary to represent the Oklahoma State Medical Association. He submits the following report:

The Annual Conference of Secretaries of Constituent State Medical Associations is very beneficial as the editors and secretaries get together and discuss their problems and none of them return home without having a broader and better view of medical conditions over the whole United States.

At the opening meeting, Dr. Dean Lewis, President of the American Medical Association, made a talk on the "Quality of Medical Care," which, boiled down, reverts to the saying which has been prevalent forever, there is always room at the top. While the quality of medical care has not depreciated materially, patients are demanding more all the time, but State medicine does not offer any hope for an improvement of the quality of medical care as it would be more on a commercial basis and the personal equation would not enter into it as it does in private practice.

Dr. F. C. Warnshuis of Grand Rapids, Michigan, gave a report of "The Michigan Survey," with its findings and application, which shows that the Michigan physicians are alert as usual and are doing a great deal for organized medicine.

Dr. Walter L. Bierring, President-Elect of the American Medical Association, spoke on the "Social

#### RESOLUTION PASSED BY THE MUSKOGEE COUNTY MEDICAL SOCIETY

Whereas, our friend and fellow member, Doctor Claude Allen Thompson, has been suddenly called from us, we, the committee of the Muskogee County Medical Society, wish to present the following resolution to you and Society in general session, this 9th day of October, 1933.

First: To express our deep personal feeling of the loss of a valued friend, so well known and greatly appreciated by each and every member of this Society.

Second: That in the passing of Doctor Thompson, the entire system of Organized Medicine, of which he was a leading factor has suffered an irreparable loss.

Third: Be it resolved that the Society extend its sincere sympathy to the members of his family, and his legions of friends.

J. G. RAFTER, Chairman  
J. T. NICHOLS  
S. J. FRYER

Dangers of the Oversupply of Physicians," and warned us of the dangers of a consequent lowering of ethical standards. Dr. Bierring said that the overcrowding in the medical profession had increased the evils of fee-splitting, unnecessary services, padding of bills, illegal operations and the employment of "runners." As a remedy he advocated requirement of a non-professional degree for entrance to all medical schools.

The recent proposal of the federal government to pro-renumeration for physicians who care for patients unable to pay fees themselves was discussed and generally approved by the delegates. Dr. Austin A. Hayden, President of the Chicago Medical Society, reported that the Chicago physicians would decide at their next meeting whether or not they were in favor of accepting the government fee.

The second day was devoted to extensive reports on "Medical Defense," which was ably presented by Dr. J. E. Tuckerman, Cleveland, Ohio. It was surprising to learn the status of progress made by physicians in some of the states. The fraternity is so solidly organized in some places that a reputable attorney will not take a case against a member of the state and county society. (I am inclosing a copy of the Rules and Regulations of the Ohio Society, so that our Secretary will have it on file for the benefit of our members and medical defense committee).

Legal problems interesting the profession were thoroughly discussed by Dr. W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation of the American Medical Association.

Dr. W. C. Comfort of New Haven, Connecticut, made an extensive report on the work of the committee of ethics and deportment of the Connecticut State Medical Society.

W. ALBERT COOK, M.D.



# ABSTRACTS « REVIEWS « COMMENTS AND CORRESPONDENCE

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Diagnosis of Gonococcus Endocarditis.** Solomon, Hurwitz, Woodall and Lamb, *Archives of Internal Medicine*, July, 1933, Page 1.

They report in detail a case of *Gonococcus Endocarditis*. The diagnosis of acute vegetative endocarditis was made clinically and proven at autopsy. The organism grown from the blood stream and from the vegetation on the aortic valve postmortem was identified as a gonococcus by its morphologic and cultural characteristics, fermentation reactions, agglutination, percipitin and complement fixation reactions. This case had evidence of respiratory infection antepartum. Three days after delivery a cough developed, productive, a grayish mucoid material, later frankly bloody, temperature 101, possibly bronchopneumonia, which subsided after a week. Patient's pulse rose then to 140 temperature, continued high, and definite evidence of endocarditis developed. From the first there was a complete hemiplegia, spinal fluid blood tinged, and with 4000 white blood cells to c.c. No organisms found. Blood culture showed organism as gonococcus.

**Treatment of Neurosyphilis.** H. H. Hopkins, *Archives of Internal Medicine*, July, 1933, Page 66.

The author discusses six types of neurosyphilis. 1. Early neurosyphilis. 2. Diffuse late neurosyphilis. 3. Dementia paralytica and the tabetic form of dementia paralytica. 4. Tabes dorsalis. 5. Optic atrophy and vascular neurosyphilis. He also gives the results favorable and unfavorable according to six types of treatment. 1. Poor treatment, patients receiving less than one year of treatment with the arsphenamines, heavy metals and tryparsamide. 2. Routine treatment, sources of arsphenamine product alternating with courses of mercury or bismuth with large dosages of potassium iodide were given for at least one year regularly. 3. Intensified routine treatment. This group was given larger dosages, and longer courses, and in most cases the old arsphenamine. 4. Routine treatment to which was added a variable number of intradural treatments by Swift Ellis method at intervals of at least two weeks. Used mostly for tabes and optic atrophy. 5. Routine treatment and tryparsamide. Tryparsamide was used extensively in late neurosyphilis of all types, except optic atrophy. Given in 2 to 3 grams at weekly intervals for from ten to twenty injections, alternating with courses of bismuth or mercury. 6. Routine treatment and malaria, used largely in dementia paralytica, most received routine treatment and many tryparsamide before malaria.

In conclusion he states that in early neurosyphilis the best method of treatment was an intensified form of routine antisyphilitic treatment with arsphenamine. In diffuse late neurosyphilis routine antisyphilitic treatment was much inferior to treatment with arsphenamized serum subdurally administered, trypar-

samide of malaria. In dementia paralytica and tabetic form of dementia paralytica, malaria was the treatment of choice. In tabes best results were obtained with malaria, although those treated with tryparsamide did almost as well, and both types were superior to routine treatment. In optic atrophy, subdural injections of arsphenamized serum was successful in arresting the process in numerous cases in which it was advancing in spite of acute routine treatment. In general the correlation between the clinical and serologic improvement is roughly proportional to the duration and type of pathological involvement.

**Treatment of Prostatitis By Injection.** Owsley Grant, *Journal of Urology*, June, 1933.

The author reviews the different types of accepted therapy of treating prostatitis, massage, diathermy, urethral lavage, etc., and describes a method of therapy of direct injection of the prostatic tissue with a 1% mercurochrome solution. A 6-inch twenty-two gauge needle is used, and guided with the finger in rectum it is introduced through perineum into the prostatic tissue, and from 10 to 20 c. c. of solution injected directly into the gland substance, and injecting some solution into tissues as needle is withdrawn. Four hundred cases have been so treated, and he has not had one untoward result. These cases so treated have been very gratifying to the author in the quickness these cases become pus and organism free, also from the feeling of discomfort in perineum and sexual symptoms.

**A New Method For The Management of Gonorrhea.** P. A. Clements, *British Journal of Venereal Diseases*, June, 1933, Page 147.

The author describes a treatment of gonorrhea by an ecto-antigen prepared by Dr. Oliver of St. Thomas Hospital, this antigen being on the principle elaborated by Dimond of the Royal Herbert Hospital, Woolwich, some years ago. It is an especially prepared vaccine of the gonococcus which is described in another article by J. O. Oliver in the same journal, requires special technic to prepare and is very time consuming. The author injects it in the groin or as close to the seat of infection as possible. There is some local reaction as erythema, and possibly focal. General reaction may be rise in temperature. Care must be administered in not injecting this vaccine in veins, as he believes that it will cause thrombosis. He states that the best hopes of curing gonorrhea lies in adequate drainage, and the raising of the resistance of host to the highest possible level. The article is well illustrated with charts.

**Non-Gonococcal Urethritis.** A. H. Harkness, *British Journal of Venereal Diseases*, June, 1933, Page 173.

The author discusses the many types of non gonococcal types of urethritis, mentioning certain foods, as asparagus, cress, and strawberries, certain drugs as cantharides, turpentine, etc., the urethritis due to the three stages of lues to soft sores, parasitic discharges with protozoa, mentazoa and fungi in the discharge. Non-specific organisms also produce ure-

thral discharge, chief among which are staphylococci, diptheroids, micrococci, streptococci and diplo-bacillus. Aseptic urethritis he mentions and in this only epithelial cells and pus cells are found in the discharge, cultures always sterile. Under urethritis due to trauma, he mentions promiscuous sexual intercourse, use of too strong solutions in urethra, instrumentation, and in-dwelling catheters. Intra-urethral herpes he mentions. Stricture is a common cause of urethral discharge. Descending infections from upper urinary tract. Urethritis occurs during the course of some systemic diseases, as malaria, gout, typhoid fever, influenza, etc. Urethrorrhoea, spermatorrhoea and prostaticorrhoea also will cause non-specific urethral discharges.

**Perforation of Bladder Wall of Pelvic Abscesses.** D. P. Fagerstrom, *Journal of Urology*, August, 1933, Page 207.

The author reports two cases of bladder perforation by pelvic abscesses, one in female when the bladder was perforated by chronic parametral abscess which developed subsequent to septic abortion. The other in a male in which he believes the bladder was perforated by pelvic abscess originating at the site of punch operation done some six weeks previously. In conclusion he states that pus collections may remain in the pelvis of either sex for prolonged periods of time without giving definite evidence of their presence, and these abscesses may erode and perforate the bladder wall. In the female the most common underlying causes are pus tubes and parametral infections, in the male the original focus is in chronic diseases of the prostate and seminal vesicles. Diagnosis is based on history, the pelvic pathology, finding by cystoscopy of fistulous opening in bladder wall, and the demonstration of pericystic abscess by X-ray.

## TUBERCULOSIS

Edited By

L. J. Moorman, M.D.  
304 Osler Bldg., Oklahoma City

**The Duration of Life in Pulmonary Tuberculosis With Cavity.** Harry L. Barnes and Lena R. P. Barnes. *Amer. Rev. of Tb.*, Vol. 18, Page 412-424, 1928.

In reviewing the statistical data presented below by these authors, one is struck with the distressing prognostic outlook accompanying cases of pulmonary tuberculosis having tissue destruction to the point of demonstrable cavity formation.

With such reports and observations as these, it has become evident to those working with tuberculosis patients, that the prognosis of cavity-cases can only be rendered more hopeful by measures designed to bring about closure of the cavity, approximation of its walls and splinting of the area to allow for fibrotic healing and ultimate obliteration.

As a result of constant perfection of such procedures as artificial pneumothorax, phrenico-exaeresis, intrapleural pneumolysis, and thoracoplasty; or combinations of the above, the outlook is now eminently better.

Needless to say, however, prophylaxis constitutes the first line of defense. Recognition of the disease prior to cavity formation and the immediate institution of adequate treatment and management will, in

most cases, serve to forestall actual tissue destruction.

Material for this article comprises 651 cavity-cases diagnosed by physical signs, admitted to the State Sanatorium (Rhode Island) between 1905 and 1918; plus 803 cavity-cases diagnosed by X-ray and admitted between 1918 and 1927; thus making a total of 1,454 cases of pulmonary tuberculosis with cavity.

The statistics concerning family history, haemoptysis, pleurisy, age, color, sex, with weight, pertain to the 651 cavity-cases diagnosed by physical signs. A thorough summary of the factors considered is given by the authors and is very brief and rather all-inclusive of the statistics presented in the body of the article.

Their summary follows:

1. 1,454 cavity-cases are reviewed:  
80% died within 1 year.  
82% died within 2 years.  
85% died within 3 years.  
90% died within 5 years.  
95% died within 15 years.
2. The average duration of life of 270 cavity-cases, from the appearance of the cavity signs to death, was 15.8 months. Had the remaining survivors died the day the statistics were compiled it would have raised the average duration to 24 months.
3. 99% of 616 cavity-cases diagnosed by X-ray had tubercle bacilli in the sputum.
4. A family history of tuberculosis, a history of haemoptysis, or the age of the patient, did not materially affect the prognosis.
5. Only 1 of 57 colored patients survived 3 years.
6. The average duration of life was 16 months in males and 14 months in females.
7. The percentage of survivors after three-year and five-year periods among patients with pulse under 90, was five times as great as among patients with pulse over 100.
8. The percentage of one-year survivors was over three times as great among the patients with temperature over 90 as among patients with temperature over 100.
9. Right-lung cavity-cases had slightly more survivors and lived slightly longer than left-lung cavity-cases.
10. The percentage of one and three-year survivors was in direct relation to the amount of pulmonary disease.
11. The duration of life bore a direct relation to the number of cavities. Of 17 cases having more than 3 cavities, none survived a year.
12. 88% of patients having cavities larger than 7 cm., died within a year.
13. Small cavity-cases (1 to 2 cm.) have about 50% more survivors at the end of the first year than have large cavity-cases (2 to 15 cm.), but 82% of the small cavity-cases died within 3 years.
14. Honeycomb cases are about as serious in outlook as cases with cavities of average size. (Speaking of honeycomb, the authors are referring to cases which presented multiple cavities under 1 cm. in diameter).
15. Patients with well-formed cavity-walls had a slightly longer duration of life.
16. Patients with well-marked X-ray evidence of calcification had a greater percentage of survivors.



17. Patients with X-ray evidence of pleural thickening over the greater part of one lung had a higher percentage of survivors.

18. Of the 1,454 cavity-cases reviewed, 1,244, or 85%, are dead, and the average duration of life was 12-plus months.

(The compilation of this data was made on January 1, 1927).

In the authors' summary, they do not bring out the question of serious complications. This subject, however, is mentioned in the body of the article, which states that of 89 cavity-cases having tuberculous laryngitis as a complication, 79 died within a year the average duration of life being 6 months. Of 17 cases of tuberculous enteritis, none survived a year, the average duration of life being 5 months. Of 11 cases of diabetes, 3 survived one year, the average duration of life being 3 months. Of 15 cases with albuminuria, 3 survived a year, the average duration of life of the 12 that died being 7 months. Of 11 cases of spontaneous pneumothorax, none survived a year, the average duration of life being 4 months.

As regards the matter of weight, it was found that of 100 cavity-cases, 53 gained weight, their average duration of life being 23 months. There were 11 survivors. One patient neither lost nor gained; 46 patients lost weight, the average duration of life being 16 months and of these there were 5 survivors. Of 16 patients who exceeded normal weight, the average duration of life was 34 months and there was 1 survivor.

As to the location of cavity in the cases having 1 cavity only 97% of these cavities were above the upper border of the 3rd rib. No cases presented X-ray evidence of cavity below the lower border of the 5th rib.

The authors touch on pneumothorax treatment only in so much as to say that 48% of the 39 cases of artificial pneumothorax survived one year. The duration of life in the 19 cases that died being 13 months. Without further explanation, they make the statement: "pneumothorax treatment greatly improves the outlook." They also make the statement that unquestionably many patients are hospitalized after cavity formation has taken place because it is at this time that tubercle bacilli are readily found in the sputum and that there is usually a definite increase in fever, cough and toxemia. Further than this, the actual conclusions from the data obtained are well given in the authors' own summary above.

#### The Heart and Tuberculosis (Mediastinal Distortion As a Source of Circulatory Embarrassment). Daniel M. Brumfiel, *Amer. Rev. of Tb.*, Sept., 1933.

It has long been recognized that any sudden change in intrapleural pressure, regardless of its causation, is almost immediately followed by symptoms objectively recognized as those of respiratory embarrassment, plus certain demonstrable changes in the cardiac rate and sometimes rhythm. The chief factor formerly held responsible for these symptoms was a sudden decrease in lung volume. However, this conception is gradually undergoing modification in that besides the sudden decrease in lung volume, there is an associated displacement of the mediastinal organs, which in turn, brings about such symptoms of circulatory embarrassment as could not be accounted for solely by the sudden decrease in lung volume.

Over a period of some years, this author has made similar observations as regards to symptoms of circulatory embarrassment, gradually following a slowly,

but definite, displacement; or, as he calls it, distortion of the mediastinum. Mediastinal distortion may and does, occur in the numerous intrathoracic pathological conditions other than pulmonary tuberculosis, however, this author confines his observations to those patients in which there is a demonstrable mediastinal distortion resulting from the various sequelae associated with, and following, chronic tuberculous disease of the lung.

He enumerates four definite ways in which such distortion is brought about. Namely: (1) atelectasis due to bronchial obstruction; (2) pleural effusion; (3) fibrosis; (4) artificial pneumothorax. The commonest, however, is the distortion of the mediastinum, which is brought about by a slow contraction of extensive fibrotic processes, associated with chronic tuberculous infection predominant in one lung. This is most often associated with large cavity formation and chiefly involves the upper lobe, but may include the entire lung.

If the whole lung is involved, it results in dragging of the entire mediastinum toward the same side. In this group, the symptoms may be delayed, their development being so gradual that the patient does not seek medical relief or is not aware of the symptoms until the deformity has been well established.

In 15 consecutive patients in whom a diagnosis of mediastinal distortion was made by physical examination and X-ray, 12 consulted the author specifically because of "heart trouble." The other 3 patients were found to have cardiac disturbance as a basis for their symptoms but were not yet aware of that fact. The symptoms usually complained of are those of palpation, precordial pain and dyspnoea (to a degree not warranted on a purely respiratory basis). Ease of fatigue and a weakness out of proportion to the extent of the pulmonary disease or its degree of activity, have been encountered.

The author states that the symptoms associated with mediastinal distortion correspond to those found in the conditions of functional disturbance of the heart and the early stages of circulatory embarrassment.

In summarizing, the author states that mediastinal distortion, incident to intrathoracic changes, may be overcome sufficiently by physiological readjustment that no symptoms are produced. On the other hand, he feels that there are a great number of cases in which subjectively, and to some extent objectively, the symptoms of circulatory embarrassment are due to visceral deformities brought about by distortion of the mediastinal structures. Such deformities are thought to result in torsion and angulation of the great vessels, particularly the venae cavae, and that the relationships and tension of the cardiac nerves likewise must be disturbed.

The symptomatology may be permanent and may finally result in true decompensatory failure with death.

Treatment in these cases is aimed solely at relief, if possible, of the tension and distortion. Such measures as therapeutic pneumothorax, phrenico-exairesis, and lastly thoracoplasty, are lightly discussed as to their relative merit.

The principal object of this paper is to call attention to the fact that mediastinal distortion, as seen occasionally in chronic pulmonary tuberculosis, may cause circulatory embarrassment of varying degrees.

## DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.  
Lain-Roland Clinic, M. A. Bldg, Okla. City

Roentgen Ray Therapy in Dermatology. Everett C. Fox, M.D., Archives of Physical Therapy, X-Ray, Radium. September, 1932, Vol. XIII.

The author prefaces this article by stating that William Allen Pusey considered roentgen therapy as the most useful addition to the treatment of skin diseases and that MacKee stated that X-ray therapy is the most useful single remedy available for skin treatment. He further points out that it is necessary for a physician to be trained in dermatology to determine the correct dosage necessary for the treatment of various skin lesions and conditions and not merely the knowledge of dosage obtained by his particular X-ray machine.

Over-treatment and excessive use of X-ray therapy must be cautiously avoided. Fox offers a table that is a good condensed form of a very comprehensive subject, giving a great deal of information dealing with various types of skin lesions and showing the average dosage required for correct therapy. The dosage is given in both skin units and R units.

The Treatment of Lichen Ruber Planus with Quartz Light. Dr. E. Swirsky, Paris. (Presse Medicale, No. 3, 1933).

"The quartz light treatment of lichen ruber planus may be regarded as the method of choice, since failures practically do not occur and recurrences are rare. However, a strong erythema followed by abundant desquamation must be achieved, which is not so easy to attain in these cases. In cases of generalized lichen ruber planus the entire surface of the body (covering the face and eyes) is divided into four sections, each being irradiated in intervals of two days at a distance of 60 cm. from the lamp. At the beginning fifteen to twenty minutes, increasing to forty-five minutes with strict observation of the action achieved. In general, 12, rarely 15 to 20 sittings are necessary. In cases with circumscribed areas, either the entire skin is covered off or the area is treated with concentrated rays, possibly with compression, at the beginning every second day at a distance of 10 to 20 cm., for ten minutes, later at a distance of 60 cm. for a longer time. In a similar manner lichen planus of the buccal cavity is irradiated with a special compression lamp, carefully beginning with two minutes, increasing two or three minutes each time until fifteen minutes, alternating between compression and 1 cm. distance. Recurrences are rare and disappear on two or three further irradiations. The action of the ultraviolet rays depends on exfoliation, intense vascular dilatation, rapid and intense cell renewal." (The above abstract was taken from *Ars Medici*, Vol. XI, No. 8, August, 1933).

Nickel Dermatitis From Spectacle Frames and Wrist Watch. Howard Fox, M.D., New York. The Journal of the American Medical Association, Vol. 101, No. 14, Sept. 30, 1933.

The author reports a case of nickel dermatitis calling attention to the original report of Lain two years ago. In this particular instance a 24-year old white male was affected on the posterior surfaces of the ears, the temporal region and on the sides of the nose; all of these were points where the metal por-

tion of his spectacles contacted the skin. Also, a dermatitis appeared on the wrist at the site contacted by his wrist watch.

The metal known as "white-gold" is composed of an alloy containing nickel as is commonly found in wrist watches and spectacles. Upon removal of the offending agent, the skin condition clears.

Resorcin Anal Dermatitis Due to Resorcin in Anusol Suppositories. James H. Mitchell, M.D., Chicago. The Journal of the American Medical Association, Vol. 101, No. 14, Sept. 30, 1933.

The author calls attention to resorcin sensitization occurring in one person in several thousand as noted by other investigators. He reports two cases that experienced a dermatitis due to the use of anusol suppositories, stating that they have a heavy sale in the Chicago loop.

In the first case reported, a physician was the victim. After three days' application for a mild hemorrhoid the skin around the anus became very irritated. Upon discontinuing the suppository the condition cleared with the acid of petrolatum. A patch test made on the arm very clearly showed a definite sensitization as well as allied drugs.

A second case, that of a cosmetic manufacturer, consulted a physician for a severe dermatitis about anal region. One dermatologist gave her anusol suppositories which produced a severe pruritus. After radiotherapy and discontinuance of the suppositories the dermatitis healed. Later, the anusol suppository was repeated and resulted in further dermatitis which again cleared on discontinuance. A patch test showed very definite sensitization to the drug.

These observations merely indicate that there is one more agent to add to the long list of external irritants.

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

Operative Treatment of Chronic Glaucoma. Arnold Knapp, M.D., New York. Archives of Ophthalmology, September, 1933.

The type of operation, the results obtained and the subsequent treatment are given in a tabulated form of two hundred cases of chronic glaucoma. The cases are summarized as follows: "The table shows that ninety-five Lagrange operations were performed, with success in eighty-five. In ten cases filtration was not reestablished, and tension returned. In two of these ten cases trephining was then successfully practiced, and in one, cyclodialysis, but without a permanent result. Sixty of eighty trephine operations were successful; in twenty cases increased tension returned. In nine of these twenty cases a second trephining was performed, with success in seven and failure in two; cyclodialysis was done in four cases, with four failures. (Failure in twenty-five per cent of cases after trephining corresponds closely with European statistics). Iridectomy was attempted in twelve cases. The tension was permanently reduced in five cases, and in seven it recurred. In 2 of these 7 cases trephining was carried out; it was successful in one and failed in one. In five of eight cases cyclodialysis reduced the tension; in three it failed to do so. Iridotaxis



was performed in five cases. In all of these the tension remained low. Everyone knows that the results of operations for chronic glaucoma depend greatly on the type of eye affected. A difficult type is the very hypermetropic, rudimentary eye with an unusually shallow anterior chamber; operations in such cases usually do not establish drainage, and the anterior chamber remains shallow. The prognosis is bad, though extraction of the lens may be attempted. There were fourteen cases in which vision and particularly the field underwent progressive deterioration even though sufficient filtration had been established. This is a striking feature which is difficult to explain, though it has been repeatedly mentioned in the literature. While investigations of glaucoma and its causes are undoubtedly making progress and should be encouraged in every possible way, valuable time must not be lost in experimenting with medical treatment, and the favorable time for successful operation must not be allowed to pass. There are undoubtedly several methods of operating for chronic glaucoma by which a satisfactory result can be obtained, and I think it was Dr. John E. Weeks who said: "whatever method the operator can use with confidence is the best method for him."

Septic Sore Throat. Dr. Calvin G. Page, Boston. The Laryngoscope, September, 1933.

Septic sore throat was first mentioned as such in the attack in Boston, Brookline, and Cambridge in May, 1911. Prominent symptoms were: sudden onset, peculiar reddening and infiltration of the pharyngeal wall, as well as of the tonsil, marked prostration and tendency to relapse, slow pulse, and irregular temperature. The mortality was high particularly in elderly people. In 1912, there were over 10,000 cases in Chicago with a mortality of over three per cent. These were traced to a cow with an infected teat which had been cared for by a man with a septic sore throat. This particular strain of streptococcus is identified by (a) the fact that on fresh moist blood-agar the colonies are moist, raised and larger than the usual hemolytic colonies and that the surface colonies soon flatten out and (b) there is a capsule or a capsular space along the chain of the cocci from recently isolated cultures when observed in moist india ink preparations. Cultures were made from tonsils of two hundred patients attempting to grow this strain of streptococcus. The experiment was not successful. Some of the complications of septic sore throat are: middle ear infection, mastoid infection, cellulitis, and deep abscesses of the neck. It is possible to have carriers of the organism so such foci as tonsils should be removed. The predominating symptom is not constant: sometimes the chief complaint is a sore throat and other times there is the typical scarlet fever eruption. Streptococcus, erysipelas, and septic sore throat have different agglutinative groups. The proper operation of pasteurization plants of raw milk will exclude the infection from being milk-borne.

Tetany in Local Anesthesia. Henry S. Dieder, M.D., Philadelphia. Archives of Otolaryngology, August, 1933.

The dreaded occurrence of tetany after injection of local anaesthesia for tonsillectomy is related by the author. In preparation the pillars of the tonsils were painted with iodine and six cc. of .5% procain hydrochloride with five drops of adrenalin chloride 1:1000 were used. Immediately the patient complained of a prickling sensation in his hands and feet followed by the characteristic posture of tetany, i.e., arms, hands,

and thumbs in the adductor position. The attack lasted about five minutes. The operation was performed without further interruption. Barbitol was used after this, pre-operative, in an attempt to prevent a recurrence of this startling experience. Nevertheless, five cases under different circumstances and different strengths of anaesthetics occurred. Cocaine hydrochloride and adrenalin were used in one in removal of a middle turbinate. The maximum length of attack was thirty minutes with no untoward sequelae. The literature shows twenty cases reported by Dr. S. E. Roberts during sub-mucous resection in which cocaine mud was used for anaesthesia. The onset started ten to forty minutes after anaesthesia had been applied and lasted two to four hours, the height of the seizure being about fifteen minutes from the beginning. Pre-operative morphine and scopolamine had been used instead of barbitol. The twenty cases were of nervous women, ages eighteen to forty years. Authorities record suppressed nervousness and hyperpnea but not local anaesthesia in connection with tetany. Tonic spasms of the hands have been produced by continued forced breathing for a period of six minutes. Under the influence of hyperpnea there occurs: (1) 44% fall in the carbon dioxide tension of the alveolar air; (2) 14.3% fall in carbon dioxide-combining power of the venous plasma; (3) a decrease in the acidity of the urine; (4) diuresis; (5) an increase in the rate of elimination of phosphates; (6) suppressed rate of ammonia excretion; (7) leukocytosis; (8) hyperglycemia; (9) typical symptoms, including tetany; (10) muscle "cramps" and other spasm possibly due to temporary alkalosis. The theory suggested is that the tetany may be due to a temporary alkalosis produced by the very rapid breathing of the patient during operation. This does not explain the reaction which was encountered while removing the middle turbinate, however, it has been shown conclusively that hyperneic cases can be produced by disquietude in nervous persons. Rarely if ever does the pulse and respiration rate of an individual remain normal during the course of an operation performed under local anaesthesia. Deficiency of the parathyroids is an acknowledged element in tetany, this condition producing a hypocalcemia. The author states that this should not have been a contributing cause in his cases as he routinely administered calcium for two days previous to operation. No reference is found in search of the literature of epinephrine being a causative factor of tetany. There is the possibility of injecting the solution directly into the blood vessel, but the author rules this out because of the fact that the tonsils were well elevated from their fossa after his method of injection. The Commission on Anaesthesia reports nothing analogous to the symptoms as described in these cases. Prevention of hyperpnea by the administration of proper sedatives and maintenance of the calcium content of the blood are urged as safe guards.

The Treatment of Chronic Suppurative Otitis. T. Ritchie Rodger (Hull). The Journal of Laryngology and Otology, August, 1933.

The subject is discussed from a social as well as a surgical standpoint and the author calls it "a reproach to the profession in general and the otologist in particular." Considering the increased number of otologists in the past generation, much progress should and is being made in the care of this unfortunate condition. In the past the family physician's advice for a running ear was to keep it dry—that only when the discharge stopped was there any danger. It was taken for granted that otorrhoea was

the natural result of scarlet fever and measles and the chronic ear, the aftermath of the acute ear, was given little attention. Now we have aural clinics in connection with medical schools. Adenoids and the diseases of childhood are more closely watched with many palliative and preventive measures being administered. It is almost impossible to complete a comparative complication of statistics in regard to the discharging ear but a years record from the Hull Royal Infirmary showed approximately ten times as many chronic ears were seen by a specialist in 1932, as in 1920. Every dry ear accomplished through operation and every successful Schwartz operation, when conservative treatment and non-operative methods have failed, can be pointed out as a chronic otorrhoea prevented. Since every acute infection must be looked upon as a possible chronic one it may be justly said that the chronic ear is mainly due to improper care during the acute stage. This does not necessarily place the blame upon the otologist or the general practitioner since the patient is the one most frequently at fault. Neither the patient or the doctor should permit the case to be dismissed until the ear is entirely dry. The advisability of myringotomy is generally accepted and if adenoids are present they are frequently removed at the same time, providing the tonsils are not touched. At the beginning of the case it should be definitely stated that if the discharge continues after a certain length of time, even if all of the symptoms have disappeared, an operation will have to be considered not only for the preservation of hearing and prevention of chronicity but to prevent the potential element of danger in every chronic ear suppuration. Except in such cases as the large anterior perforation with small apparent tubal mucoid discharge the rule should be: "Every discharging ear which cannot be made to cease by careful conservative treatment within a reasonable time, ought to be subjected to operation." Of the different non-operative treatments the author prefers the dry one after a thorough preliminary cleansing. If adventitious growths are present in the middle ear or external auditory canal these must be entirely removed before treatment is inaugurated. The external ear is syringed gently and the middle ear cleansed by means of a Hartman's cannula. When the solution returns clear the surface is dried and boracic powder is insufflated. The patient is told to return when the ear is moist and the same procedure is repeated. Any untoward factor present in the nose or throat must be removed. These are just a few of the principles which we should keep in mind if we are to decrease the incidence of the chronic discharging ear.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Spondylolysis, Its Causes and Its Consequences** (Spondylolyse Ses Causes et Ses Conséquences), by Carl Roederer, Paris, and Pierre Glorieux, Bruges, La Presse Medicale, October 7, 1933.

Spondylolysis (Spondylolyse) is defined as "a solution of continuity in the posterior vertebral arch, passing between the superior articular process and the inferior articular process, the gap being either unilateral or bilateral."

Its existence has been known for many years. Schwegel, Broca, Farabeuf, Wellis, Le Double have written about it. It is estimated that it exists in from

2 per cent to 5 per cent of vertebral columns examined.

It may be congenital or acquired, but in either case it has a deleterious static effect upon the vertebral column. The authors believe that there are many acquired cases, the cause being trauma.

There are several theories as to the type of trauma. The authors believe that hyperextension of the spine is the principal factor.

Spontaneous localized pain and pain on effort, in lower back after a trauma, in persons without symptoms before the trauma, suggest the possibility of a fracture of a vertebral isthmus (acquired spondylolysis).

The fifth lumbar is the usual site.

The most important part of the article is the definite statement that the gap (fracture line) is always visible in a "three-quarter" X-ray negative if proper search is made. A stereoscopic view is a valuable adjunct, but its importance is secondary to that of the "three-quarter" negative.

**Comment:** This subject is of particular importance to the surgeon doing industrial work. In injuries followed by pain and weakness about the lumbosacral junction, this lesion should always be remembered. Its demonstration by antero-posterior and profile views is not commonly possible. For that reason the "three-quarter" negative suggested in the article should be put to a practical test.

—LeRoy Long.

**Post-Traumatic Subdural Hematoma—Operation—Cure** (Hematome—Sous-Dural Chronique Post-Traumatique—Operation—Guerison, by R. Fischer and G. de Morsier, La Presse Medicale, October 4, 1933).

A man of 55, house porter (conciierge). Fall from motocyclette December 24, 1931, with stunning and a wound about left brow. Walk of forty-five minutes to his home.

Returned to work in eight days. At that time felt well. Within few days some difficulty in walking, easily exhausted, continued to work with difficulty.

At the end of about a month fatigue pronounced. Could no longer work. Defective memory, indifferent, taciturn, momentary mental confusion.

On March 8, 1932, confined to bed, disoriented, occasional erotic gestures, incontinence urine and feces. Reflexes little more active on right side. Right arm and leg hypertonic. Right Babinski. Understands orders but cannot read. Apraxia pronounced.

Remission of symptoms a few days later—oriented, continent, speaks and writes clearly, co-ordination movements good, but a persistence of defective function of right arm and leg, and of right Babinski. Abolition reflexes right abdomen. (This noted at beginning of symptoms).

Lumbar puncture. Cerebro-spinal fluid clear, pressure low, Wassermann negative.

**Diagnosis:** Subdural hematoma, anterior left hemisphere. Operation March 18, 1932. Bone flap left parietal. Dura mater bluish. Cyst containing fluid the color of bilirubin, and blood clots—about 60 c.c. to 70 c.c. in all—beneath dura, but not attached to it. Cyst covered most of hemisphere. Cyst wall about one-half millimeter in thickness.

Contents of cyst removed with care but membrane not disturbed. Cure rapid and complete.

The authors present the interesting hypothesis that,



because of the difference between the osmotic pressure of the contents of a subdural cyst resulting from hemorrhage, and the surrounding cerebro-spinal fluid, the cyst increases in size by the entrance into it of the cerebrospinal fluid. They report experimental work which gives the hypothesis strong support.

—LeRoy Long.

**Billroth I (Haberer) Operation For Bleeding Duodenal and Gastric Ulcer.** Waltman Walters, M.D., Rochester, Minnesota. Staff Meetings of The Mayo Clinic, September 27, 1933.

Walter has recently operated on 2 cases by this method, in each of which the bleeding lesion was removed en bloc, with the first portion of the duodenum, together with a sufficient portion of stomach to reduce gastric acidity. The end of the stomach was then anastomosed directly to the duodenum, using the Haberer method of decreasing the circumference of the stomach in order that it might be approximated to the smaller circumference of the duodenum.

"In the Mayo Clinic, various methods of treatment of gastric and duodenal ulcer have been employed in the past thirty-five years. These methods have consisted of the following: (1) removal of the ulcer by the cautery method of Balfour or by knife excision with reconstruction of the pyloric outlet; (2) gastro-enterostomy; (3) segmental resection of the stomach or duodenum, and (4) gastric resection, using the anastomotic method of Polya, Balfour or Billroth as indicated in individual cases. Sometimes excision of the ulcer and pyloroplasty are combined with gastro-enterostomy."

"The results of these procedures in large series of cases in which operation has been performed in the Clinic have been reported from time to time by Balfour and by Judd. A conservative attitude in the treatment of patients with duodenal ulcer, especially when they are not complaining of bleeding, obstruction or perforation, has always been maintained. The results of this policy have been a low mortality rate and excellent results otherwise in suitably selected cases. Two years ago, Balfour found that operation had been advised for approximately 45 per cent of the patients who presented themselves at the Clinic with chronic duodenal ulcer during the preceding year; the others were placed on a medical regimen. The basis for advising operation was the occurrence of hemorrhage, perforation, or obstruction, or failure of adequate medical care to produce the desired results. The surgical procedure in each case of duodenal ulcer (or of gastric ulcer) was determined at the time of the operation and that which seemed most suitable, whether excision of the lesion with pyloroplasty, gastro-enterostomy, gastroduodenostomy or gastric and duodenal resection, was performed. The principal advantage desired of any method was that it should make possible removal of the lesions, safely whenever possible, but always with relief of the pyloric and duodenal stasis. Many large, perforating, and obstructive duodenal ulcers can be removed only with considerably greater risk than when the indirect operation of gastro-enterostomy is carried out. Yet, in most cases of this type, the results following gastro-enterostomy have been among the best following any surgical procedure. Here, again, the results of these various procedures in large groups of cases have been reported by Balfour and by Judd.

Until 1921, in most of the large clinics in this country and abroad, the methods of surgical attack on duodenal ulcer consisted primarily of excision of the ulcer, with pyloroplasty, gastro-enterostomy or gastroduodenostomy. Not infrequently, gastro-enter-

ostomy was performed without disturbing the duodenal lesion. In central Europe, subsequent to the war, it was noted that a greater percentage of patients were developing recurring ulcer following these operative procedures than had been apparent previously. The explanation of this has been placed on a pathologic basis by Konjetzny, Anschütz, Puhl and others, who showed that in their cases duodenal ulcer, almost without exception, was accompanied by, or preceded by, marked gastritis involving, most often, the lower third of the stomach. Principally for this reason, and because of an increasing percentage of recurrence after gastro-enterostomy, gastric resection, with and without partial duodenectomy, became popular among surgeons in Germany, Austria and Hungary. The presence of this gastritis, and the reported incidence of recurring ulceration following gastro-enterostomy in from 10 to 20 per cent of their cases, led Snell and Walters to make a comparative study of duodenal and gastric lesions seen at operation in the countries mentioned with those seen at operation in the Mayo Clinic. They have described and commented on the dissimilarity of lesions encountered on the two continents and have emphasized the relatively uncommon occurrence of association of gastritis, with duodenal ulcer in patients operated on in the Clinic.

However, by resection of 15 to 17 c.m. of the stomach, one is able to decrease not only the total gastric acidity, but apparently, also the presence of free hydrochloric acid, often to a minimum, as demonstrated by fractional analysis of gastric content following the test meal. It is this particular feature, Walters believes, which lends itself to consideration in the surgical care of certain patients with duodenal ulcer, when the condition is complicated by an unusually high value for gastric acidity. The researches of Mann, Dragstedt, Ivy, and others have demonstrated experimentally the importance of the acid factor in the development of intestinal ulcers. It is known that properly performed gastro-enterostomy with a proper functioning gastro-enteric stoma, usually decreases the acid content of the stomach. Rivers has shown that patients who have undergone gastro-enterostomy and whose gastric acidity has become decreased have obtained unusually good results from this operative procedure.

The Billroth I method in which direct anastomosis is made between the end of the stomach and duodenum, after removal of ulcerating lesions of the stomach and duodenum, would appear to be an ideal method of restoring gastro-intestinal continuity. It has an advantage over pyloroplasty in the greater reduction of gastric acidity which follows, but has the disadvantage of carrying a somewhat greater operative risk. Both procedures result in the gastric secretion being made to empty into the part of the small intestine that is most resistant to this secretion; namely, the second portion of the duodenum, and area where ulceration never occurs. The Billroth I type of gastric and duodenal resection removes the gastric or duodenal lesion, reduces gastric acidity and restores gastroduodenal continuity.

—LeRoy Downing Long.

**Advantages and Technic of Preliminary Hemostasis in Thyroidectomy.** Martin Nordland, M.D., and Lawrence M. Larson, M.D., Minneapolis, Minnesota. The Western Journal of Surgery, Obstetrics and Gynecology, Volume 41, Number 9, September, 1933.

The advantages and technic of obtaining hemostasis in goiter surgery by the ligation of the inferior

and superior thyroid arteries preliminary to subsequent thyroidectomy are described in detail.

Ligation of the inferior thyroid arteries has been found to be advantageously accomplished through the extrafascial route rather than within the capsule of the gland.

The procedure of inferior arterial ligation is one which can be done rapidly; it can be carried out through the same incision as is used for the thyroidectomy, and it adds little or no risk to the operation.

The arterial supply to the upper poles of the thyroid gland can be interrupted through ligation of the poles themselves or by isolating and tying the vessels alone. The former procedure has the advantage of preserving that portion of the gland which is most likely to be normal and healthy. Care must be taken in ligations of the superior thyroid vessels, not to include the superior laryngeal nerve, in as much as danger to this structure may result in motor disturbances of the larynx.

Preliminary ligation of all four arteries to the thyroid gland has been carried out in 168 cases by the authors, and advantages of this procedure they summarize as follows:

(a) With proper preliminary hemostasis as recommended, the postoperative field is drier, the incidence of injury to the recurrent laryngeal nerves is definitely decreased, fewer ligatures on bleeding vessels are necessary, postoperative wound drainage is less in amount, and a better cosmetic as well as functional result is uniformly obtained.

(b) The particular indication for preliminary ligation of the inferior thyroid arteries exists in the case of recurrent toxic goiter in which secondary operations are especially prone to be complicated by nerve injury, hemorrhage and infection. Improvements in results as well as facilitation of technic have been found to accompany the procedure in this type of case.

Following ligation of all four arteries to the thyroid gland it has been proved, both experimentally and clinically, that the nutrition to the parathyroid bodies is not impaired. Actually, less danger to these glands exists when preliminary ligation is done, because of the fact that a drier field is present as well as a cleaner dissection made possible, so that these important structures can be more easily avoided.

In the authors' experience of 168 cases they have found that preliminary extrafascial ligation of the inferior thyroid arteries combined with polar ligation

of the superior vessels is a procedure which is accompanied by few or no dangers, but possessing many advantages in the surgery of the thyroid gland.

—LeRoy Downing Long.

**Adynamic Ileus.** Alton Ochsner and I. M. Gage, New Orleans, La. *American Journal of Surgery*. May, 1933, Page 378.

This excellent article is too long for abstracting and it is such a valuable article that it should be read in its entirety. Anyone who does abdominal surgery should read this article. Dr. Ochsner and his associates have been doing much valuable experimental work on the intestinal tract in recent years.

The conclusions given meet with my hearty approval. He summarizes his article as follows:

1. The causes of adynamic ileus are varied. They may be intra-abdominal or extra-abdominal. The most frequent cause of adynamic ileus is exposure to air and manipulation during laparotomy.

2. Adynamic ileus occurs earlier postoperatively than mechanical ileus. It is characterized by the absence of colicky, intermittent pain. Plain roentgenograms of the abdomen are of inestimable value in the diagnosis of all forms of ileus.

The treatment of adynamic ileus varies according to the type. The prophylactic treatment consists of abandonment of preoperative and postoperative catharsis and the avoidance of unnecessary trauma and peritoneal contamination during the performance of a laparotomy.

4. Physiologic ileus which occurs for varying periods of time following all laparotomies is treated by withholding the oral administration of all substances until nausea has ceased, by the application of heat to the abdomen, and by the administration of morphine. Water balance should be reestablished.

5. Severe adynamic ileus is treated by transduodenal decompression by means of indwelling nasal catheters and remineralization of the patient. Hypertonic salt solutions ("hypertonic" Ringer's and "hypertonic" Hartmann's solutions) injected intravenously stimulate the intestinal movement in adynamic ileus. In severe cases one or more enterostomies are frequently necessary in order to decompress the dilated intestine. A splanchnic block (splanchnic or spinal analgesia) is often efficacious. Drugs are of little or no value.

LeRoy D. Long.

## REPORT OF EXAMINATIONS FOR LICENSES TO PRACTICE MEDICINE

Examination held at State Capitol, Oklahoma City, September 12th and 13th, 1933. The following applicants passed:

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Daniels, Harry Anthony	1896	Staples, Minn.	Univ. of Minn.	1921	Okla. City
Hemphill, Clyde Hoke	1891	Marion, N. C.	Univ. of Maryland	1913	Asher, Okla.
Morey, John Barnhart	1904	Dansville, N. Y.	Univ. of Buffalo	1927	Ada, Okla.
Newman, Floyd Smith	1906	Jay Bird, Ohio	Univ. of Tenn.	1931	Shattuck, Okla.
Hull, Wayne M.	1908	Parkston, S. D.	Univ. of Okla.	1932	Okla. City
Munding, Linus A.	1906	St. Paul, Kans.	St. Louis Univ.	1932	Muskogee, Okla.
Whitsitt, James Joseph	1907	McKenzie, Tenn.	Univ. of Tenn.	1932	Drumright, Okla.
Kane, Bernard Eyan		Kane, Penn.	Univ. of Chicago	1933	Okla. City
Lamb, John H., Jr.	1905	Manila, P. I.	Univ. of Okla.	1932	Okla. City
Hemphill, Geo. Kenneth	1905	North Loup, Neb.	Univ. of Penn.	1931	Pawhuska, Okla.
Steel, Marcella Reed	1905	Minn. Mankato	Univ. of Wisc.	1930	Tulsa, Okla.
Campbell, John Duval	1905	Dallas, Tex.	Baylor Univ.	1932	Duncan, Okla.
Veazey, Lyman C.	1904	Van Alstyne, Tex	Univ. of Texas	1932	Ardmore, Okla.
Aday, Dewey	1898	Marshall, Ark.	Univ. of Ark.	1930	Bartlesville, Okla.
Fowler, Arthur D., Jr.,	1908	Pine Bluff, Ark.	Univ. of Ark.	1932	Seminole, Okla.



# THE JOURNAL

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## SYMPOSIUM ON MENTAL HYGIENE

"WHY MENTAL HYGIENE" - - James J. Gable, M. D., John L. Day, M. D.

"THE PHYSICIAN'S INCREASING INTEREST IN MENTAL HYGIENE"

- - - - - Henry H. Turner, M. D., F. A. C. P.

"THE PSYCHIATRIC SOCIAL WORKER AND MENTAL HYGIENE"

- - - - - Grace A. Browning

### WHY MENTAL HYGIENE?\*

JAMES J. GABLE, M.D.

JOHN L. DAY, M.D.

Central Oklahoma State Hospital

NORMAN

Mental hygiene is an educational art in the field of mental and nervous diseases, which stresses the importance of good mental health. It not only seeks to improve the health of those who are mentally sick, but also seeks to protect the health of the normal. When we read recent statistics formulated by the National Committee for Mental Hygiene, we can readily see why Dr. Ray Lyman Wilbur, then Secretary of the Interior, in the Twenty-seventh Congress of Medical Education, became the eminent sponsor of psychiatry and mental hygiene. Dr. Wilbur was aroused by the proportion of abnormal minds in our American population and admonished the American physician to better acquaint himself in this field of medicine, declaring that "Democracy demands at least a majority of competent citizens with orderly habits and balanced temperate minds. Human behavior on the whole determines our success or failure as a nation. Disaster awaits any people with too high percentage of the insane, mentally defective or emotionally unstable. In sanity lies safety." Dr. Wilbur was indeed in earnest for he had learned that there are now over 300,000 patients in our men-

tal hospitals with about 75,000 new admissions yearly—that about one out of ten of our population will suffer from some incapacitating mental disorder and that one out of twenty will receive treatment in a mental hospital—that there are more patients today in mental hospitals than all other hospitals together—that the expense is enormous, costing the state government about one-eighth of its total appropriations—the greatest expense of any state department other than the schools. He knew also that there is still much misinformation prevalent concerning the care and treatment of patients in mental hospitals, that there is still the idea in the minds of too many people that these hospitals are prisons or asylums and that brutal and inhuman treatment is administered to these patients. These facts alone should answer the question "Why Mental Hygiene?"

We are aware of the great indifference of the medical profession toward this branch of medicine. We are aware that until the past few years anything mental was considered much as a step-child by the medical world, but we are glad that today these conditions have changed and now psychiatry is fully accepted in the medical family. The attitude of the alert physician has rapidly changed. He now realizes that he cannot intelligently practice medicine without using all tools available and is applying himself more diligently in the field of mental diseases. This alert physician is

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now thrilled with the idea that he has a fair understanding of psychiatry.

The growing urge for mental hygiene is reflected in the changing policies of medical schools. In 1914 psychiatry was taught for an average of eighteen hours—this was an equivalent of a one hour course. Dr. Ebaugh of Denver, tells us that psychiatry is now being taught in our medical schools on an average of sixty-eight hours or four times as many hours as in 1914. It seems that the American physician is gradually awakening to the fact that it is impossible to treat successfully the physical body without taking into consideration the mental aspect. In other words, we are rapidly learning that the successful physician is the one who correctly blends the art of psychotherapy with that of medical science and without a general knowledge of mental and nervous diseases it is impossible to attain this art.

To lessen the ravage of mental illness, our greatest opportunities lie in attacking the causes. This study should start with the obstetrician, who intelligently directs the prenatal life, who correctly diagnoses position, and who exerts every effort to protect the brain of the child from the many types of traumas and asphyxiations. It is needless to call your attention to the great number of children with birth palsies, epilepsies and defective mental development, which possibly could have been avoided by a little more care on the part of the obstetrician.

The conscientious pediatrician must also be very alert if he successfully directs the mental life of his children. He realizes that if he can keep them happy and adjusted in their young life that they will be happy and adjusted throughout adult life. He admonishes the parents to let the child lead a simple life—not too much handling or coddling—not too much attention or may we say interference on the part of the anxious parents. Too often it is the spoiled apron-string child of today who becomes our psycho-neurotic of tomorrow. Independence and resourcefulness are very conducive to happy adjusted childhoods. These vital factors should be encouraged and thoroughly protected. The early detection of endocrine disturbances is an important feature for the pediatrician. Glandular dyscrasias of most all types treated early respond, but failure to observe them has wrecked the intellectual lives of countless numbers.

The child's adjustment in school life evidences a profound reflection of the adjustment of his parents and home life. Poor home adjustments make poor school adjustments, thus the necessity of the child welfare and child guidance clinics to care for the behavior disorders as well as the under-privileged, slow and subnormal child. Every physician should be a leader in this child guidance work. In the hands of the untrained, it is a dangerous undertaking. Mental hygiene should be taught in the public schools along with physical hygiene. Our children should know that the mind and body cannot be separated, that what affects one affects the other—that the brain is the most delicate organ in the body, is the seat of the mind, and is the most likely of all organs to be affected—that if taken early most mental cases can be cured—that the mentally ill should be looked upon sympathetically, treated early and openly and not looked upon with disgrace or suspicion, but that they are really sick just as much so as a man with pneumonia or a broken leg.

So far we have been speaking of the early phases and factor of mental life, wherein the seed of functional neuroses are frequently sown. Let us now consider briefly a few of the causes of the major psychoses. Doubtless infective exhaustive diseases top the list. The majority of these are treated in their own homes. Fortunately this class of psychopathics practically all recover when given rest, freedom from responsibility and cheerful surroundings.

Heredity must yet be considered a potent factor in our functional psychoses as well as our defective and border-line cases. Proper means to prevent mating of the unfit, along with selective sterilization, would accomplish much in eradicating these types of psychopathic taint. It must be remembered, however, that seldom are the inmates of our feeble minded schools and mental hospitals the offenders, and that strict enforcement of all laws passed with reference to these institutions alone cannot be expected to accomplish too much. Institutional cases as a rule are well cared for—the ones outside are responsible for most of the havoc. Men of rare training only should have the responsibility of selecting these cases for sterilization.

Syphilis is the offender in eight to twelve per cent of our major psychoses. With an educated public and more careful



treatment by the family physician, in a few generations neurosyphilis should be rather rare. If every known luetic was compelled to take treatment until his serology was negative and forced to have annual Wassermann tests throughout life, and if every couple were forced to have a negative Wassermann test from a reliable laboratory before a marriage license was issued, there would soon be a number of vacant luetic beds in our mental hospitals.

The part that alcohol and drugs play in mental illness has been variously estimated. In most instances, we believe that the fundamental cause of this mental incapacity lies deeper than the product of these exogenous toxins. In other words, we are of the opinion that there is something fundamentally lacking in these individuals' mental make-up—something missing in their inhibitory volitional or emotional field. We simply believe that most alcoholic and drug addicts are psychopathic before their over-indulgence—that the alcohol and drugs are really secondary manifestations. These people, in many instances, get along nicely with their first mental handicap, but with added trauma of drugs and alcohol are unable to carry on. By public education and efficient national laws, gradually the number of our drug and alcoholic addicts should greatly diminish.

Our modern American life is adding much to the bulk of mental illness. Fast living, over-work, over-worry, over-stress and over-strain, with its enormous wear on the nervous system is being recognized more and more as a causative factor in our exhaustive and depressive psychoses. What we need is more simple living. Fast transportation with endless accidents, particularly head injuries, is responsible for our increase in traumatic psychoses, leading in many instances to post-traumatic mental enfeeblement. While our modern business life with companies taking out a large bulk of insurance for their employees is adding its toll to our psycho-neurotics (compensative neuroses). There is an endless stream of exciting factors in mental illness which time does not permit us even to mention. It is to be remembered that the etiology of mental trouble is by no means a sealed book, and neither is the treatment. We have much to learn about the workings of the mind, but we believe, however, that mental hygiene properly applied has vast opportunities. This educational art is not for

the physician alone, but must include all types of social agencies, yet the doctor must lead the way.

DISCUSSION: *Dr. L. S. Blachley*, Oklahoma City.

Members of the section—I shall discuss this paper in so far as I can from the viewpoint of the worker in public health and in education. During the past eight years, I have heard a great deal of discussion about mental hygiene. In fact, the first institute for the state nurses was held at the Capitol, and at that time, we had one of our number from Tulsa talk to us on the subject of mental hygiene. I confess, I did not get much out of her discussion. She seemed to be very enthusiastic about it and I gathered from what she said, that this was a most important topic in the East at that time. From time to time in the course of my work, I have read as much as I could on the subject and I find that everyone, practically, is interested in this subject. On one sheet which I am passing out to you, are listed four governmental agencies, twenty-eight societies, associations, private agencies, eight funds and foundations and three commercial or semi-commercial agencies. This list was taken from Dr. Turner's "Principles of Health Education." Last summer at Northwestern I had my class send for the free literature which could be obtained from these several agencies. I was impressed by the number of references made to mental hygiene by these organizations. Doctors have always been interested in mental hygiene and health. The doctors of today are interested in mental hygiene as the doctors of olden days. They do not always call it that, and I find that doctors as a rule are very, very modest, and they hesitate to discuss anything which they have not fully informed themselves about. I consider that a fine trait, and I am not criticizing the profession. I know how difficult it is for the doctors to buy all the books or get all the books that are now put out in the name of psychiatry, health education, mental health, psychology, etc. I have skimmed through many of them and in order to be of assistance to you, I have brought the four books that I consider of most importance to the general practitioner and to the physician who is not a psychiatrist.

"Normal Youth and Its Every-day Problems," by Dr. Douglas A. Thoon, is

just off the press. Dr. Thoon is located in Boston and has an unusual insight into the child.

"Every-day Problems of the Every-day Child." This book as the above book is made up from the author's own experiences with actual cases. He discusses these cases under various headings—such as: adolescence, physical development, personality, education, parents, sexual problems, etc.

The next author is Dr. Arnold Gazelle who has long been interested in the study of the child. He has made sufficient study of the normal child to be able to tell us what a normal child looks like and what he can do from four months to six years. Dr. Gazelle is a professor in Yale University.

Another author is Dr. Burnham. He has a remarkable book on "Wholesome Personality." I find to have a wholesome personality, one must be grown up emotionally, socially and intellectually. Most of us are not yet grown up.

"Our Children," is written by twenty-nine experts, put out by the Viking Press and gives a picture of the whole subject of the child. This is an intensely interesting book.

A splendid magazine to have on the table in your office is the "Parents," magazine. Its authors are well known psychologists, social service workers, etc.

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*Dr. F. M. Adams, Vinita.*

The statements made by Dr. Day in his paper that there are 300,000 mental cases confined in the institutions today is an astounding statement. Of all the branches of medicine, the branch of nervous and mental diseases has been neglected through preventive medicine. The mentally ill are terribly neglected. The proposition of prevention is going to have to come forth and be looked after because we are going to have to prevent these terrible conditions rather than have to take care of these mental cases. Twenty-five years ago, we did not pay much attention to this condition. Fast living has caused a wonderful increase. The depression has caused an increase. Each change in the economic conditions brings an increase of mental cases into the insane hospital.

Dr. Blachly has referred to child guidance, etc. Personally I think there has been too much "hooley" published on this

subject. Some of the publications are good, but about one-half of it is bad. I guess that child guidance is all right to a certain extent. Child guidance is a sociological problem. You can go to our training schools and look at the broken homes there and see why we are having delinquent children and emotional children. It is the fact that the homes are being broken up and they have no one to properly supervise them. If we could go into the city and eliminate the slums of the city, and then give proper environment and proper food we would see conditions improve.

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*Dr. H. H. Turner, Oklahoma City.*

I read Dr. Day's paper before the meeting. In the paper the doctor brought out the importance of the glands of internal secretion in relation to mental hygiene. It is a very important subject. In the severe type of hypothyroidism, the patient is mentally deficient, in the pituitary types, the dystrophy genitalia type, they are very obese and the genitalia do not develop. These children find out about their condition when they go into the dressing room at school, they find that they are different from other children, and they develop a morose condition. In the University Hospital, I had a boy who said if I did not do something for him, he would kill himself. We have the thin child, who is obstinate, child-like in their reactions—these can all be helped. I want to stress the importance of the glands of internal secretion and their relation to mental hygiene. We are far behind in the problem of mental hygiene, we have no organizations particularly interested in mental hygiene. A start has been made in the last three weeks in regard to the formation of a State Mental Hygiene Association. I wish you would all get interested in the condition and get in touch with Dr. Gable at Norman, and he will give you information as to how to start an association in your home town and finally merge it into the state association. Of course, there is a lot of "hooley" connected with it, but there is so much more good to be derived from it. Oklahoma should get in the race and join the other states in the Union in this matter of mental hygiene.

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*Dr. M. S. Gregory, Oklahoma City.*

I was very much interested in Dr. Day's paper because the doctor has mentioned



the home. After working for many years, I have come to believe that the "home is the nucleus complex for mental diseases." The first five or ten years of the child's life is the all important. We are going to meet discouragements and disappointments. We are going to try to teach parents how to rear children. Let me tell you one thing, parents are going to rear their children the way they please. I wish to caution the doctors that you are going to be disappointed when you attempt to train parents to recondition their children in order to condition them. Intelligence and education do not make for healthy children in the home. Frequently children are brought to me and recently I had a child brought to me whose mother had a Ph. D. She had lost complete control of this child. I took the child into my private office and talked to her, she was a brilliant child, and was perfectly calm. When she came in contact with her mother I cannot describe the reaction this child had. We have here a mother with a Ph. D., who will have to put her child in a special school in order to have the child re-conditioned.

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Closing Discussion: *Dr. J. J. Gable* Norman.

This paper was to stimulate more interest in mental hygiene and mental health. I wish to thank Dr. Blachly because she has done considerable work in this line, and for her splendid discussion. I also wish to thank you for the liberal discussion of the paper.

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### THE PHYSICIAN'S INCREASING INTEREST IN MENTAL HYGIENE ✓

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The science of mental hygiene is so new, and there are so many experiments and discoveries being made, and so many interesting things to learn, that it is impossible in the time allotted to me to give more than a general review of the subject from the viewpoint of a doctor of medicine.

What is mental hygiene? That question naturally faces us at the outset, and, without a clear conception of its function and its place in the program of education,

it will not avail us very much to simply study it in a sort of dissected manner.

We are all familiar with the terms "anatomy, physiology, and hygiene" as they are applied to the body. "Anatomy" comes from two Greek words meaning "to cut up." This can be studied from a dead body. "Physiology," in its root meaning, carries with it the idea of nature producing something. It is the science of functioning, and needs to have a live subject for its study. "Hygiene" is almost the equivalent Greek word for health, and *hygeia* was the Goddess of health.

Now, in a similar manner, we may have mental anatomy, mental physiology, and mental hygiene. The old fashioned psychology was a sort of mental anatomy, and cut the processes of the mind into pieces. The new psychology rather seeks to be structural and to deal with living processes of thought and ideas, and seeks to apply mental processes toward normal health conditions in order that mind and body shall not be antagonistic to each other, but mutually complimentary. It may be said that mental hygiene includes two branches of mind study, that of psychology, which deals with minds, normal and healthful, and psychiatry, which is the study of diseased mental conditions. Thus mental hygiene must include these two studies, and, in addition, must recognize the place of eugenics, sociology, law, ethics, morals, religions, and education. Its aim and purpose is the building up of such a mind base as shall be productive of happiness. For this is, in effect, the sign of healthful mental conditions. Someone has aptly said that mental hygiene is the science of happiness; but, of course, this type of happiness must be lasting, and not momentary.

There is nothing in the universe which may not be used in a way to make it a source of danger. The force of gravity, which holds our solar system together, is productive of some of the most serious disasters ever seen; whereas, one of man's own inventions, to draw the analogy most clearly—the automobile—kills more people year in and year out than the World war did. Yet, no one has seriously considered abolishing the automobile. It has not even been suggested, and, even if it were suggested, I have not the slightest idea that the suggestion would have any effect upon the industry.

The automobile is not a bad illustration.

It performs most beneficent functions when it is driven by the proper person in the service of, let us say, a socially accepted ideal. Suppose this is an ambulance carrying a doctor to someone who has been injured. The automobile then becomes a fine instrument of public service. But suppose it is driven by a bootlegger at 70 miles an hour through the center of the city, surrounded by a smoke screen, with bullets flying back and forth that may hit any innocent bystander. It then becomes an engine of destruction—moral, physical, and social. It is not things in themselves that are good or bad. It is the use that is made of them. Psychoanalysis is nothing more nor less than a way of discovering certain things about the mind—certain facts and information of the way in which the mind works. It is no more moral nor unmoral than anatomy or physiology. In fact, it is an anatomy and physiology of the mind.

It is true that when the psychoanalyst began to dissect the human mind he found a lot of things that rather shocked the average conservative, matter-of-fact minded individual; whereupon said individual raised his voice against the iniquity of psychoanalysis. His voice has had just as much effect as the havoc of the hypothetical person mentioned above who might object to the manufacture of automobiles.

Much has been made of the fact that among certain primitive people where there is a very free expression of the instinctive life there is an absence of neurotic and mental disease, but I always like to add to this statement that these people remain primitive. The process of recapturing the energy from these instinctive channels of expression for purposes of sublimation is the job of civilization, and, like all such high adventures, it is fraught with danger. No such process can take place which has as its objective such high purposes without there being a certain percentage of casualties on the way, casualties that are represented by the failure to effect results aimed at. These are the casualties of the nervously and mentally ill, and they represent in a very real sense the price that we have to pay for civilization. It is the purpose of the mental hygiene movement, for example, and of the practice of psychiatry in its preventive aspects, to endeavor to find out whether or not this price may not be reduced.

William James said that we could not

have anything without having too much of it, and, perhaps, we have had too much of certain aspects of psychoanalysis. We have had too much of the cheap popularization of this subject and too much of uninformed criticism. We never can have too much of the facts which it has to disclose. Professor Freud many years ago warned this country that it accepted psychoanalysis too readily; that he would have preferred to have seen it more critically dealt with; that he believed it would thrive better under criticism which kept it within bounds. It has suffered more from its friends than it has from its enemies, but that does not mean that it should welcome the uninformed critic.

In the progress of the medical sciences the recognition of mental disease and its treatment have come last. For thousands of years the physician has been studying and treating the body, and, particularly since the days of Pasteur, he has been enormously successful in ridding mankind of certain specific, infectious, communicable diseases.

Now, psychoanalysis comes along and attempts a study of the human mind. It offers to study mental diseases, to attempt their understanding, to get their causes and develop as far as possible adequate methods of prevention.

In the few years that it has been at work it has discovered many things which its advocates believe to be facts of observation and laws of functioning of the human mind. If what it has discovered are facts, then they have added so much to our knowledge and will help in so far in developing the program as above indicated. To the extent that they are not facts, they will have to be discarded.

Psychoanalysis is very like an operation, and depends upon a knowledge of the structure and functions of the mind, and there are very few people, not only in this country, but in the whole world, who are competent to deal with a patient psychoanalytically. There are, unfortunately, however, a great many people who are perfectly willing to try their hand at it, and here is where the trouble comes in. The demand is so great and the supply is so small that many unqualified persons are tempted, quite naturally, to undertake the relief of human suffering when an appeal is made to them. Efforts are being made to try to correct this situation, but it will take some years with the cooper-



ation of the great teaching institutions, particularly the great medical colleges of the country. The day is surely coming faster and faster when the facts that psychoanalysis discloses will be welcomed more eagerly than the errors which have been made in its name will be condemned.

Mental disorders are of various kinds: some, like idiocy and feeble-mindedness, are congenital; some have a definite physical cause, such as a tumor of the brain; but a very great many have emotional causes of a kind that can be dealt with by a better environment. Nervous disorders of this kind arise from desires without corresponding activities. A really vigorous human being who desires something that he cannot have will turn his attention to something else and let the thwarted desire die, but many human beings, including some who are potentially of great value, are not capable of this effort. Emotion is a force generated by obstacles, like the pressure of a river against a dam. When the pressure of a river against a dam becomes dangerous, there are two possible measures: the dam may be broken down or a new channel may be dug for the river. Exactly the same thing applies to the desires of human beings; the emotions generated by obstacles to the gratification of desire may acquire a dangerous force, which can be mitigated either by the gratification of the desire, which corresponds to the breaking down of the dam, or by creation of new desires that can be gratified, which corresponds to the digging of a new channel.

The National Committee for Mental Hygiene was active from the time of its foundation in 1909 in stimulating the establishment of psychiatric and mental hygiene clinics. There was an early realization that, if these clinics were to do effective preventive work, they must serve children as well as adults, for childhood, as Dr. William White once said, is the golden age for mental hygiene. Although a certain number of children could be served through the out-patient departments of psychopathic hospitals and at mental hygiene centers offering clinical facilities, these means were exceedingly inadequate. The first clinics exclusively for children were still somewhat limited, by virtue of being connected with Juvenile Courts and primarily concerned with delinquent types, or, in other instances, because the chief purpose was to diagnose the mentally deficient and provide them

with proper instruction in the public schools or at state institutions.

There are large numbers of maladjusted children whose difficulties are not sufficiently serious to make them court cases or suitable patients for the ordinary type of psychiatric clinic. They are well developed intellectually, but present personality and behavior patterns which bid fair to handicap them in the economic and social adaptations of adult existence. To meet the needs of these common problems of childhood, the National Committee for Mental Hygiene, aided by the Commonwealth Fund, launched a campaign (1922) for the establishment of child guidance clinics. Two "field clinics" were kept in operation over a five year period, demonstrating methods of child guidance in seven cities—St. Louis, Los Angeles, St. Paul, Minneapolis, Cleveland, Dallas (Texas), and Philadelphia. Without exception, these communities provided for the continuation of the child guidance clinics on a permanent basis, securing financial support through boards of education, community chest, etc.

The necessity for trained workers in these branches of child guidance resulted from the interest in the movement which was very shortly manifested by many cities. Requests for aid in organizing clinics and in selecting personnel became so numerous that at the close of the demonstration program the National Committee continued to maintain a division on community clinics to meet these demands. Approximately 300 mental hygiene clinics for children have come into existence since 1922. At least 125 of these, besides those listed as growing directly out of the demonstration program, refer to themselves as "Child Guidance Clinics." The staff unit consists of psychiatrist, psychologist and psychiatric social worker, the size of personnel varying with community needs and adequacy of financial support. Some operate on a full time and others on a part time basis. There is an estimate that last year more than 40,000 children were examined and treated in psychiatric clinics in the United States.

If in its origins mental hygiene owes a debt to psychology, and psychiatry (in particular), it has more than repaid it by the stimulating and broadening influence it has exerted on those two sciences. In its mental hygiene aspects, clinical psychology has advanced far beyond the simple task of mental testing, and has be-

come concerned with educational and vocational maladjustments, motivation of conduct, personality development, and many other dynamic and vital phases of human life and adjustment. As for psychiatry, which was originally limited to the treatment of mental diseases, in response to the mental hygiene demands upon it, it has been re-created.

From the careful statistical studies of the prevalence of mental disease in the United States, it is possible to make reliable general statements. Strecker and Ebaugh summarize these facts as follows: "It is known that 5,000 new patients are admitted annually to the state institutions for the insane. When one takes into consideration the many patients who never reach public hospitals (being cared for privately) and, further, the numerous psychopathological border-line conditions, such as the psychoneuroses, which are often just as serious and disabling in their consequences as the psychoses, yet do not require institutional care, it becomes clear that mental disease constitutes a serious and far-reaching economic problem."

We could, perhaps, take a more optimistic attitude toward the problem of mental disease if a survey of the statistics showed that it was tending to decrease. But the evidence of the figures shows, on the contrary, that mental disease is still increasing. In 1910 the state hospitals were giving custodial care to 187,791 patients; in 1920 there were 232,680 patients in these institutions, and the 1930 census shows that the numbers are still growing steadily — being approximately 340,000.

"It is commonly believed," writes Frankwood Williams, Director of the National Committee for Mental Hygiene, "No one ever becomes insane suddenly. Mental disease develops over a long period of time. From small beginnings it grows insidiously until, to the uninitiated, it blossoms forth in full bloom to the distress and consternation of those taken by surprise. And yet, before their eyes and the eyes of school teachers and ministers and friends and family physicians, the thing has been developing all these years—only they have called it by other names."

It is this conception of mental disorders which has been an incentive to the development of psychiatric clinics for children and of student personnel work in the college and universities. When the mental

maladjustment has advanced to the stage of unmistakable mental disorder, a long period of therapy is necessary, involving unhappiness of the individual, his relatives and friends, and also an economic and social loss in terms of the months, even the years, of treatment and readjustment. When unwholesome personality trends are detected in early life, and reconstruction of the personality undertaken at that time, the outcome is far more hopeful.

The first distinctive application of science to the problem of childhood and family life appears in the movement to conserve the physical welfare of infants. Progress in this direction has been so extensive and fruitful that it is hard to realize that it has come about in practically the last twenty-five years. A quarter of a century ago there were not more than half a dozen children's specialists in the United States. At that time no medical school had a department of pediatrics, and no laboratory was equipped to investigate the medical problems of children, with the exception of diphtheria.

"Faith is the assurance of things hoped for, the conviction of things not seen." In its wide meaning it is a human need, for it both establishes the security we must have and at the same time gives promise of satisfactions not yet experienced. It is found everywhere because men and women, in their various contacts with life, require the feeling of security, a foundation for hope. Thus faith becomes an antidote for fear.

Mental hygiene recognizes that faith works wonders not only in religious experience and in the ordinary undertakings of life, but especially in psychotherapy where expectation counts so strongly in favor of the patient. The specialist welcomes as an ally strong faith without regard to the form it takes, because he knows it will give the patient a sense of security and a hopefulness which will reinforce all the influences that are making for better mental health.

Mental hygiene has its narrower and its wider aspects. Its values are also both immediate and remote. In its beginning it was an effort to give the insane more humane and helpful treatment. Appearing as it did at a time when medical science had begun to realize the importance and possibilities of a preventive program, it soon outran its curative projects and



boldly entered the larger field which medicine was cautiously exploring. Its development was so recent that, in spite of its early interest in those already insane, it has no entrenched and long-continued policy to which its new preventive program had to be adjusted. Free to follow the new lead given by the more progressive medical men, there was nothing to hinder mental hygiene from attempting an educational campaign to eliminate as much as possible of the suffering due to mental disease.

Medical science in its effort to master physical disease has necessarily kept itself within the province of the body. On account of this concentration, mental hygiene comes to medicine with an important suggestion. The individual who is sick evidences his trouble in both the physical and mental spheres, as we are wont to define them, and any efforts to assist nature in his recovery cannot afford to forget the mental aspects of the problem.

The practicing physician is an artist as well as a scientist, who finds as he enters the bedroom of a sick patient that he has left behind him some of the exactness of his laboratory. His treatment of the sick person is an art because the physician has to adapt his methods to the peculiarities or the individual with whom he deals. His training and his major interest tempt him to consider this adaptation merely from the body viewpoint, but his neglect of the mental aspects of his problem may antagonize the skill he uses in his choice of drug, diet, or whatever the situation calls for. As leaders in medical science are more and more realizing, the mental hygiene point of view has special significance for the physician, whose reluctance in the past to give serious heed to the psychic aspects of medicine, including what are often called the sociological factors, has given the charlatan an opportunity to exploit therapeutic resources that rightly belong to medicine.

I am convinced that the physician is more interested in mental hygiene than ever before; that he is rapidly learning how to treat the neurotics; that he has quit giving them "shot-gun" prescriptions, thereby increasing their invalidism. He has quit laying every nervous ailment to the sexual organs. He has quit removing ovaries to remove fears and anxieties, and quit circumcising the ladies to allay their sexual abnormalities. He is fast learning

that these same sexual erraticisms occur in men, who have no ovaries. He is studying more the home life, the personal family, maladjustments, correcting these, and thereby restoring happiness, not by "shot-gun" prescriptions, not by dissecting, but, oft-times, with simple psycho-therapeutic measures. In other words, he is treating the whole situation, and getting results.

The physician of today is becoming more interested in the early recognition, early care and treatment, and prevention of such mental disorders so frequently seen in this institution, and which we have been privileged to see today. He is detecting earlier the symptoms of neuro-syphilis, and is instituting treatment, thereby arresting or avoiding paresis. He is watching and adjusting the peculiar "shut-in" boy or girl, thereby preventing the development of praecoxes. He is recognizing the early endocrinopathies. He is advising young parents how best to bring up their children to be happy, well adjusted, free from "apron-strings," and able to stand upon their own; thus preventing many behavior problems which have been the terror of our schools and homes. He is winning their confidence by soothing their sorrows, calming their fears, and sustaining their hopes. He is realizing that when you relieve a man's fear and give him hope, he is then well on the road to recovery.

I have referred to psychoanalysis and the psychoanalyst frequently in this paper. The vast majority of us have in the past been awed by the incomprehensible vocabulary and Hinduistic attitude of those who specialize in this fascinating branch of medicine, but after all the frills are removed, psychoanalysis, as it should be, is merely the use of good common horse-sense, and we all practice it. Over 50% of our daily advice and prescriptions are mainly for psycho-therapeutic effect.

I am of the opinion that it will be found that physicians, taken as a whole, are accepting the teachings of mental hygiene, and are applying them in their practice. Anything which raises the physical, mental, and moral level of humanity will find hearty support among doctors, even though there may be a few reactionaries in our midst.

## THE PSYCHIATRIC SOCIAL WORKER AND MENTAL HYGIENE

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Association

OKLAHOMA CITY

Next to the profession of medicine, the profession of social work is probably the most interested and most active in the field of mental hygiene. The efforts of social workers to cope with emotional disturbances and problems of behavior among the underprivileged reach as far back as the history of social work. Among the dependent classes there have always been many insane and feeble-minded, as well as many neurotic individuals, cases of chronic alcoholism, juvenile and adult delinquency, truancy, irresponsible and deserting husbands, domestic difficulties and other manifestations of personalities who were poorly adjusted to society. Methods of treatment of the social aspects of these problems have undergone considerable change through the years but it was not until the development of the mental hygiene movement that social workers began to gain a working understanding of such personalities. During the last few years, the profession of social work has seized eagerly upon the principles of mental hygiene as a preventive measure for much of the misery with which it deals.

One of the most recently developed branches of social work is that of psychiatric social work. The psychiatric social worker is a social worker "who has had systematic instruction in the psychological factors underlying behavior, in the principles of physical and mental diseases and their social aspects, and special training in dealing with psychiatric cases."

Mental hygiene, a broader term than psychiatry, includes the preventive as well as the curative aspects of handling mental disorders and emotional difficulties. It embraces the work of all professions interested in promoting mental health. It includes the treatment of advanced mental conditions but is even more concerned with the early recognition and treatment of behavior difficulties and personality problems which, if neglected, may later lead to serious mental disorders.

The term, psychiatric social worker did not come into use until 1918, although the first attempt in the United States to use

a social worker in the care of patients with mental disorders was in 1905 when a social worker was employed in the Neurological Clinic of the Massachusetts General Hospital in Boston. In 1906 a social worker was placed in the psychopathic wards of Bellevue Hospital in New York.

When the United States entered the World war, it was found that there were not enough psychiatrists to meet the need so Dr. Southard and Miss Mary C. Jarrett of the Massachusetts General Hospital opened a school for the purpose of training women to aid the psychiatrists. Thus began the Smith College School of Training for psychiatric social work. Since that time the demand for trained social workers in the psychiatric field has increased to such an extent that training courses have developed in all of the leading schools of social work. There are now between three and four hundred trained psychiatric social workers in the United States. Dr. Frankwood E. Williams, Medical Director of the National Committee for Mental Hygiene says that "the well-trained, capable, experienced psychiatric social worker has become indispensable in psychiatric work."

The conduct of the patient under treatment of a psychiatrist can be understood only by a study of the entire history of the individual and particularly a study of his childhood. The Child Guidance Clinic has developed since 1921 as a means of studying the child who is beginning to show maladjustments. The organization and methods of the child guidance clinics have changed until they have become highly organized community enterprises. The Commonwealth Fund established the Institute for Child Guidance in New York City in 1927, as the result of a five year experiment conducted by the National Committee for Mental Hygiene. Similar clinics have also developed in many of the other large cities. A considerable number of social workers are employed in connection with these clinics. The clinic staff is usually built around a nucleus composed of the psychiatrist, psychologist and psychiatric social worker. Each child examined is given a thorough physical examination, a neurological and psychiatric examination and a psychological examination. The psychological examination is for the purpose of determining by means of psychological tests any special disabili-



ties or aptitudes which the patient may have.

In addition to these examinations a complete and careful study of the social history of the patient is made by the psychiatric social worker. This social history is secured more or less routinely for every case. It may take several weeks or even longer to obtain a full social history as sufficient confidence must be built up by the worker in the patient and in the other sources of information. The material in the social history is classified under such headings as the following:

Identifying data, the problem as referred and by whom referred, the personal history of the patient including his developmental history, health and habits, school history, work, recreation, companions and special interests; the family history with information concerning paternal and maternal relatives, parents, siblings, home conditions, neighborhood, sanitation and hygiene, economic status, intellectual, moral and social standards; family relationships; religion; treatment previously received and the disposition suggested. Factors that suggest any abnormality in the patient or his environment are noted and details of the present difficulty are carefully ascertained.

Usually after the social history has been obtained and the various examinations made, there is a group discussion by the clinic staff and the diagnosis and treatment plan are then made. This treatment plan necessarily involves not the patient alone but his total home situation including parents, sisters, brothers, as well as his neighborhood and school situations.

While the psychiatrist is responsible for the psychiatric treatment, the psychiatric social worker is in general responsible for the social treatment of the individual. This means the "supervision of the patient in the community in such a way as to bring about a social adjustment for him. In some cases all that is possible may be the modification of the environment so that a fairly satisfactory social adaptation may be made for him in spite of his mental handicap. Wherever the outlook for improvement is at all favorable, however, the aim of both the social and the psychiatric treatment is to bring about a change in the attitude of the patient himself, to replace undesirable mental habits by wholesome ones, to modify his conduct by training of his emotions and to give him insight into his difficulties, so that he may eventually overcome his disabilities, and be able to make a satisfactory adjustment in any environment."

Thus, we see that in addition to her work in gathering information, the psychiatric social worker is an active therapeutic agent and the connecting link between the psychiatrist, the home, the school and the general community. This function of the psychiatric social worker is essential because examinations are time-consuming and the psychiatrist, confined as he is to his office and the clinic cannot carry out all lines of treatment.

After the psychiatric social worker has secured the information needed for the social history and has prepared it in topical form for the record and for use in treatment, she then records any additional information chronologically and in the same way keeps a record of the treatment instituted and carried out.

Not all of the work of the psychiatric social worker is confined to extra-mural clinics such as that described above. Such workers are employed in connection with hospitals for mental disease, institutions for the feeble-minded, research foundations, educational institutions, institutions for delinquents, protective and probationary agencies, state societies for mental hygiene, mental hygiene clinics, health agencies, vocational adjustment centers, nursery schools, family social work organizations, children's institutions and child placing agencies, recreation projects and by private psychiatrists.

Unfortunately Oklahoma is not as far advanced in the matter of a mental hygiene program as many other states. There is no child guidance in the state and no mental hygiene clinics of any kind except those conducted by the doctors of our State hospitals. They are over burdened already, with the care of thousands of institutional patients and it is obviously impossible for them to do all that they should like to do in a preventive program. Their services at present reach far beyond the walls of the State Hospital. As far back as 1927, a mental hygiene clinic was begun in Oklahoma City by the doctors of Central Oklahoma State Hospital. It has been held once each month except July and August, at the office of the United Provident Association. During this time 178 patients have been examined; most of them referred by social agencies. Of this number, treatment outside of the institution was recommended for 101. This treatment consisted sometimes of physical care through local hospitals and clinics

and sometimes it was largely social treatment which the United Provident Association workers could carry out by adjustment of family relationships or other environmental situations. Forty-seven of the total number examined were advised to enter the State Hospital. Many were persuaded to sign their own commitment papers. One patient who had been unable to work for two years was persuaded to enter the hospital where he remained for three months. He improved so much in that time that after his release he was able to obtain a good job and has now maintained his family for two years. Of course, all of the cases were not so hopeful; seventeen were given a diagnosis indicating some permanent disability which made an adequate adjustment to society impossible, yet institutional care was unnecessary. The social worker was able in these cases to be of considerable service by interpreting the patient's condition to his relatives so that he could live more happily, in spite of his limitations. Some of the patients examined remained under the care of the Mental Hygiene Clinic for treatment or observation and were benefited greatly by the understanding and encouragement they received,

The doctors have been able through this clinic to accomplish much in the way of prevention of mental disorders. It is obvious, of course, that so many patients could not have been examined if the psychiatric history had not been prepared in advance by the social workers and much of the follow-up work carried out by them.

This extension clinic is not by any means the only work of this kind being carried out by the doctors here at Central Oklahoma State Hospital. They are daily sought out by individuals from all over the state who fear a mental breakdown; they are consulted by representatives of universities and colleges, concerning student problems and by social workers who face behavior problems or emotional difficulties in their clients, with which they feel unable to cope.

You, as members of the medical profession, are in a position to help a great deal with a mental hygiene program in this state. Lay people and their legislative representatives should be educated to the need so that adequate appropriations will be made including funds for the employment of psychiatric social workers to help the doctors. In addition to obtaining the social histories and aiding in social treat-

ment of the patients, well trained social workers could be of tremendous aid in making investigations before parole of the patients from the hospital and in following them up after parole. Child guidance and mental hygiene clinics under the direction of qualified psychiatrists are needed throughout the state but, of course, they will have to come gradually. In the meantime we can make a beginning by working toward the establishment of a social service department in all of our State hospitals and our institutions for the feeble-minded to aid the staffs of these institutions in the splendid work they are already doing.

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#### DOES QUININE IN THE INDUCTION OF LABOR HAVE A DELETERIOUS EFFECT ON THE FETUS?

E. L. King, New Orleans (Journal A. M. A., Oct. 7, 1933), observed three instances in which it appears logical to conclude that quinine was responsible for the fetal death. It appears that one cannot ascribe to quinine a part of any particular importance in the induction of labor. It is certain that it has no such action when employed alone, and it is questionable whether it is of any value when used in conjunction with other drugs or procedures, as in the methods of Watson and Slemons. In view of the reported fetal death, which can in all fairness be charged to the quinine used, it would seem to be wise to discontinue entirely the use of this drug in the induction of labor or at least to employ it in smaller doses. There seems to be little doubt that equally good results will be obtained without subjecting the child to the added risk of poisoning from the quinine employed.

#### TULAREMIC PNEUMONIA: REPORT OF CASE

By reviewing the extensive literature on tularemia, James R. Gudger, Detroit (Journal A. M. A., Oct. 7, 1933), found two cases of tularemic pneumonia, in one of which the patient recovered. He gives the details of an additional case of tularemic pneumonia that terminated fatally. The principal features were a severe generalized infection, with the greatest degree of involvement in the lungs; without lymphatic enlargement. The condition was diagnosed by serum agglutination, the course of which lasted thirty-one days. The exact route by which the infection reached the lungs, whether through the blood stream, lymphatic channels, or the respiratory passages, is unknown. In the terminal stage the infection was generalized, and there was clinical evidence of extreme toxicity. Lesions characteristic of those produced by tularemia were present in the lungs and peribronchial lymph nodes.



## CHRONIC SUB-DURAL HEMATOMA— CONSIDERATION FROM THE STANDPOINT OF ETIOLOGY, SYMPTOMATOLOGY AND TREAT- MENT

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A chronic sub-dural hematoma may present one of the most perplexing neurological problems confronting the physician and surgeon. Its etiological factors are of a type that are apt to be overlooked in their obscurity. The progress of the process itself is as a rule insidious, further confusing the picture. Lastly, but of great importance, is the fact that the neurological symptoms and signs are not constant in every case and also vary in a single case from hour to hour and day to day. They also are frequently of such bizarre type as to make one wonder whether they are real or functional.

This pathological process has been described in the literature at intervals in the past 400 years. Cushing and Putnam<sup>1</sup> called attention to a report by Pare of the case of Henry II of France. His death in 1559, was the result of a sub-dural hematoma which followed a blow on the forehead, sustained in a tourney. Coincident with this fact, one of our present day sports contributes to this lesion as it is this type of hemorrhage that is apt to be produced by blows sustained in the prize ring.

In recent years, a number of valuable contributions have been made to the literature on this subject. Those of outstanding value because of the complete analysis of etiological factors, symptoms and signs are the papers by Putnam and Cushing<sup>1</sup>, Sherwood<sup>2</sup> and others. In 1931, Kaplan<sup>3</sup> reported eight cases and gave special emphasis to a sign that has become invaluable when found present, namely, the unilateral dilatation of the pupil.

The theories advanced as to the cause of the process are numerous. Trotter<sup>4</sup> has stated that trauma was practically always the etiological agent. He granted that some underlying bleeding diathesis might possibly play a role in cases of mild trauma. Alcoholism, chronic inflammatory processes such as syphilis and possibly some of the systemic disease may play a part. It is possible that they contributed only by predisposing to hemorrhage. A constant etiological factor has not been found

common to all cases unless trauma is the cause. Putnam and Cushing have mentioned that the trauma may be so slight as to seem insignificant. Frequently, the patient may forget a slight injury, particularly if considerable time has elapsed between the injury and the onset of alarming symptoms.

For years, we have been taught to look upon each skull fracture or head injury as a potential case of middle meningeal hemorrhage. The syndrome with such a lesion is very definite and we routinely observe all trauma cases for hemorrhage because it is a process that is curable if recognized and treated early. It may interest you to know that a sub-dural hematoma occurs much more frequently and is just as dangerous. Never-the-less, it is rarely considered by the majority of men treating cases of acute head injury. In five years I have had the good fortune to have observed eight cases of sub-dural hematoma. I will give a report of four of these cases, all of which have occurred in our clinic within a period of seven months. In five years I have seen only one case of hemorrhage from the middle meningeal artery. I believe this is the experience of others and serves to stimulate more careful observation which may enable us to pick up more of these curable lesions.

A subdural hematoma as the name implies is a collection of blood directly beneath the dura and external to the arachnoid in the so-called subdural space. As the very gradual venous ooze continues, a thin friable membrane forms, the outer layer lying adjacent and slightly adherent to the dura and the inner layer lying next to the brain, but not attached to the cortex. These walls form a cyst containing very black old blood in which a few very friable fragments of clot may be found. This lesion may be bilateral but as a rule forms over one side of the brain only. The cyst may cover the entire convex surface of a hemisphere being limited by the midline above the floor of the anterior middle and occipital fossa below. Lantern slides to be shown later will give you a better conception of the extent of the mass.

The syndrome produced by this type of intra-cranial lesion can best be conveyed to you by presenting the following cases which illustrate the points I wish to make.

They will serve to give you an idea of the treatment and results to be expected.

## CASE REPORTS

### Case No. 1

Injury to the head followed by persistent headache and loss of consciousness eighteen days after injury. A left sub-dural hematoma was exposed and evacuated, refilled and again evacuated without improvement. Death resulted and necropsy was granted.

E. McG., colored, female, age 49, was admitted to St. Anthonys Hospital on the service of Dr. McNeill, August 12, 1932.

**History:** July 24, 1932, the patient fell on a flight of stairs at her home and struck her head. She was dazed but not unconscious. Although she had a persistent headache she continued to care for her household for two weeks. On August 11th, her headache was practically unbearable and she was given a hypodermic (presumably of morphine). Within a short time she was comatose, in which condition she was admitted to the hospital. Dr. McNeill saw her and in view of the findings asked for surgical consultation as he suspected a left intra-cranial lesion, probably hematoma. Four hours later when I saw her she could be aroused, answered questions, could use both arms and legs, although the right tended to be a little more spastic than the left. Because of her responses I suggested observation for a time and mentioned that her actions were similar to those seen in hysteria.

For two days her condition steadily grew worse and on August 14th, she was again unconscious.

**Examination:** The left pupil was dilated, the right face slightly flattened, the right arm and leg spastic and the tendon reflexes were exaggerated. Her fundi were normal. The temperature was 99 degrees, pulse 60, blood pressure 158-98. The urine was negative, white blood count 14,600 and her blood Wassermann was negative. The spinal fluid was slightly xanthochromic and contained 24 crenated red cells with 2 leucocytes per cm. There was a trace of globulin and the spinal Wassermann was negative. A diagnosis of left sub-dural hematoma was made.

**Operation:** A subtemporal decompressive opening was made on the left side under local anaesthesia. The dura gave the characteristic greenish blue appearance. On incising the dura, a greenish purple smooth membrane bulged into the wound. This was incised and a large quantity of old black liquid blood containing clots the consistency of wet blotting paper filled the wound. This was removed and the cavity irrigated with solution until the solution returned clear. A large portion of the membrane could then be removed, exposing a compressed but otherwise normal brain. No bleeding points could be found. During this procedure she began moving the right side, awakened and would answer questions in a rational manner. Twenty hours later, she again had lapsed into coma and was again carried to the operating room where it was found that venous blood had refilled the cavity. This time, a thin walled vein passing from the under surface of the temporal lobe downward into the margin of the tentorium at the petrous ridge was coagulated to control the hemorrhage as this was the only bleeding point that could be found. She failed to rally after this procedure and died 12 hours after operation with a terminal pulmonary complication and a marked elevation of temperature.

A post-mortem examination of the brain was ob-

tained. In addition to a few fragments of membrane that remained, she had a nodule of firm fibrous tissue measuring 15 by 20 mm., attached to the dura in the Rolandic area near the mid-sagittal sinus. We were unable to find evidence of this having contributed to the hemorrhage.

**Comment:** The symptoms and signs in this case were typical. No cause other than trauma could be detected. The spinal fluid contained a few red blood cells giving a clue to a hemorrhagic process and is neither favorable to or against hematoma. The findings at the second operation gave a clue to the source of the slow venous oozing. A short communicating vein extending from the base of the temporal lobe to the dura sustained damage from the shearing force of a blow at right angle to its course. The unilateral dilatation of the pupil was of definite value in diagnosis and localization of the lesion.

The following case presents the picture that we consider typical of this type of hemorrhagic process. The three months interval between injury and definite symptoms is not unusually long but in this particular instance, the patient and family had forgotten the injury because it was considered slight at the time.

### Case No. 2

Injury to the occipital region, persistent headache for three months, gradual onset of hemi-paresis, state of semi-confusion, unilateral dilatation of the pupil. Subtemporal decompressive operation with removal of the blood clot. Complete recovery.

J. M. G., a white male, age 73, entered St. Anthonys Hospital March 9th, 1933, having been referred by Dr. Horace Reed. He complained of persistent headache for three months, weakness of the right side of the body and a state of disorientation and mental confusion. On December 9, 1932, he fell on the icy street and received a severe blow to the occipital region as he struck the pavement. He suffered only a momentary loss of consciousness and was able to return to his office, walking with aid. He continued working until March 3, 1933, during which time he experienced a continuous generalized headache. On March 3rd, he quit work because of headache and general debility. At home he was restless, slept very little and wandered aimlessly about the house in a dazed and disoriented state. He grew progressively worse and in three days he was found to have a marked impairment in use of the right hand. This progressed to practically a complete loss of use within twenty-four hours. A possibility of encephalitis was considered until the history of trauma was obtained.

The family history was insignificant. The past history was significant in that his urine was found to contain a trace of sugar some 3 or 4 years before. However, his urine on repeated tests remained sugar free by careful attention to his diet.

**Examination:** This well preserved white man's mental state was one of confusion and disorientation. There was no evidence of damage to the skull or scalp. He complained of tenderness to percussion over the left side of the head. The pupils were round and reacted to light, but the left remained slightly larger than the right. He had a slight right facial weakness central in type, marked weakness of the right hand and arm with a tendency to drag the right leg when walking. The fundi appeared normal. Tendon reflexes were hypo-active. Oppenheim and Babinski positive on the right. Blood pressure 122-60, pulse 62. X-ray plates of the skull gave no evidence of a fracture. The urine was negative. The white blood count was 13,600 with 77% polymor-



phonuclear leucocytes. The spinal fluid was clear but slightly xanthochromic, cell count 2 and contained a trace of globulin.

The diagnosis was chronic sub-dural hematoma on the left side. On March 11, he was carried to the operating room where the hematoma was exposed through a subtemporal decompressive opening under local anaesthesia. Some 250 c.c. of old liquid blood containing small masses of clot of the consistency of wet blotting paper was removed. The wound was closed without drainage. The post-operative course was uneventful and the patient returned to his home at the end of one week following operation and reported back to his job on part time three weeks from the day of operation.

**Comment:** This case presented both signs and symptoms typical of this type of lesion. Three months had passed between the time of injury and the onset of severe symptoms. He did not have a papilledema. The pupil on the side of the lesion was dilated. He had a state of mental confusion characteristic of this type of lesion and a weakness of the contra-lateral face, arm and leg. Treatment was instituted at a time when his general condition was good and the result was most pleasing. His recovery was surprisingly rapid.

#### Case No. 3

The following case is not one of true sub-dural hematoma although the collection of blood produced symptoms characteristic of hematoma. It was complicated by actual cerebral damage, completely changing the prognosis.

Jacksonian epilepsy, left cerebral exploration, dura removed, trauma to the left side with sudden onset of symptoms, evacuation of old blood, on the third day slight improvement, secondary craniotomy eight weeks later, death resulted and necropsy was granted.

W. M. P., age 27, an Indian, was referred by Dr. Roscoe Walker of Pawhuska, Oklahoma. He was first seen on October 13, 1932.

**History:** October 10, 1932, while in a fit of anger he sustained a blow to the left side of the head and from that instant had been unable to move the right arm and leg. He also had a complete aphasia which had progressed from the morning following the injury to the complete stage twenty-four hours later. He had shown very little response to stimulation. The spinal fluid was reported to be blood stained.

A history of having had Jacksonian seizures involving the right side of the body for several years was obtained. In September, 1931, a left cerebral exploration in a western clinic revealed only some changes in the arachnoid. The dura was removed over the temporo-parietal region to aid in relieving the convulsions. He received complete relief for three months, then a remission which responded some four or five months later to dehydration therapy and luminal. For five months preceding the present illness he had been symptomless.

**Examination:** This man, a well nourished full-blood Indian bore a well healed scar of a temporo-parietal osteoplastic flap. His responses were those of one in a semi-comatose state. There was a beginning ecchymosis about the temporal region at the base of the flap, a dilatation of the left pupil and weakness of the right face, right arm and leg. He could not move the right side due to a spastic hemi-plegia. In view of the sudden onset of paralysis, a cerebral lesion, hemorrhagic in type, was considered. After some six hours observation, it was decided best to look in through an opening in the anterior limb of the incision on the grounds of a possible hematoma.

This was prompted by the dilated pupil and the latent ecchymosis at the base of the flap suggesting extravasation of blood from beneath the bone flap. The wound was opened under local anaesthesia and 150 c.c. of old fluid blood removed. He immediately began moving the right arm and leg and began to talk. Within a few minutes, however, his responses lessened and his condition at the end of operation was very grave. His temperature mounted, some pulmonary edema developed but after several days the temperature subsided. His condition showed very little improvement in the next five weeks. He did not regain his speech or the use of his side. An X-ray then revealed a fracture line crossing the former bone flap vertically. This was very likely the source of bleeding which caused the hematoma.

On November 26th, the old osteo-plastic flap was reflected in the hope that the remains, if any did remain, of the clot could be removed. The hematoma had not reformed although fragments of the partially organized greenish yellow membrane were present over the area exposed. These were adherent to the cortex. He did have an area of cerebral softening in the temporo-parietal region with old hemorrhage into the brain substance. Very little could be done to aid this man and he expired twenty-four hours after operation, the temperature having again reached a peak of 106 degrees.

**Necropsy:** There was a thin greenish yellow friable membrane over practically the entire left cerebral hemisphere. An area of softening and hemorrhage with degeneration 5 to 6 cm. in diameter was found in the temporo-parietal region extending to a considerable depth. In addition there was edema of the adjacent tissues and a marked gliosis.

**Comment:** This process was identical with a sub-dural hematoma but was complicated by cerebral contusion with hemorrhage. His hematoma was probably due to hemorrhage from the fracture line crossing the bone flap, but cortical bleeding may have added to the process.

Trauma was the outstanding causative factor. The sudden onset of paralytic symptoms were not in keeping with a hematoma, but actual contusion of the brain or cerebral hemorrhage would produce this symptom.

The dilatation of the pupil was the outstanding guide to the proper diagnosis.

#### Case No. 4

The following case is particularly interesting in view of the symptoms of general increased intracranial pressure which illustrates the necessity for differential diagnosis from brain tumor.

General pressure symptoms, duration three months, cerebellar symptoms predominated, negative cerebellar exploration. Air injection, removal of sub-dural hematoma with complete recovery.

L. G., white male, age 22, referred by Dr. J. H. Barham of Tulsa, was admitted to University Hospital, February 7, 1933.

**History:** This boy's symptoms began early in December, 1932, at which time he had a fullness of the head as with a head cold. Soon afterward he began to notice an occipital headache each morning that would clear up later in the day. Throughout December the headache increased and by the first of January, 1933, he noted slight visual impairment. He vomited at intervals, experienced diplopia and a slight sense of unsteadiness of equilibrium on change of position. He had an absence of symptoms of cor-

tical involvement. There had been no mental symptoms, no confusion or disorientation.

Two points of interest were elicited in the past history. There was an indefinite history of trauma when he was struck across the head in a fight several weeks prior to his first symptoms. Six months ago, he had had some training as a boxer and thought he might have had a minor injury. The other significant point was the fact that he has been known to drink to excess.

**Examination:** This boy was mentally alert, cooperative, well oriented and did not give evidence of having a memory defect. The scalp was negative. There was a bilateral papilledema with venous engorgement, some exudate and numerous hemorrhages about the optic disc in each eye. Strabismus was not present. He had lateral nystagmus to each side but greater to the left. There were no other cranial nerve signs. The tendon reflexes were decreased equally throughout and the abdominal reflexes were absent. In view of the absence of cerebral involvement and a history of unsteadiness in gait, in addition to slight nystagmus and a high degree of intracranial pressure a posterior fossa tumor seemed most likely.

The blood Wasserman was negative, urine and blood normal. A cerebellar exploration February 9, 1933, failed to show evidence of a tumor. He responded well to the suboccipital decompression for one week and then suddenly gave signs of increased pressure causing pain and a marked herniation. Late in February a ventriculogram gave evidence of a left frontal mass tending to displace the entire ventricular system to the right. This gave the clue as to the location of his lesion. On March 2, 1933, a left frontal flap was reflected and a large sub-dural hematoma exposed extending over at least two-thirds of the convex surface of the left hemisphere. The blood was sucked out of this cyst and all of the membrane removed.

His course was stormy, but he steadily gained ground. A complication that annoyed us considerably was the lack of proper balance between production and absorption of cerebro-spinal fluid. He did not have a recurrence of the hemorrhage, but a ventriculogram denoted the presence of a mild internal hydrocephalus.

**Comment:** This case was unusual in that he presented evidence of increased intra-cranial pressure, identical with symptoms of a tumor.

The signs of localizing value did not prove dependable. The ventriculogram revealed the location of the lesion that could just as well have been determined by a trephination. We did not suspect a lesion of this type and therefore did not resort to trephination as recommended by Cushing<sup>1</sup>.

His intermittent disturbance in cerebro-spinal fluid balance would seem best accounted for by a disturbance in absorption rather than to a block in the fluid pathways.

Lantern slides of lesions and ventriculograms.

In summary: Chronic sub-dural hematoma is more frequent following trauma to the head than the usually watched for hemorrhage from the middle meningeal artery.

A history of trauma with vague symptoms and signs of an intra-cranial lesion,

should cause one to suspect the presence of a hematoma.

A unilateral dilatation of the pupil is of value in establishing the diagnosis and location of this lesion.

Trauma is the most constant etiological factor, but alcoholism, syphilis and other debilitating diseases may contribute by predisposing to hemorrhage.

Ventriculography may be resorted to but a simple trephine opening will give positive evidence of the presence of a hematoma.

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DISCUSSION: *Dr. Fred Y. Cronk, Tulsa.*

This is a most interesting condition to the diagnostician and especially to the surgeon from the standpoint of trauma to the head. Doctor Wilkins has laid considerable stress upon the etiological factors entering into the production of symptoms. I want to emphasize especially the severity of the lesion from the standpoint of seemingly trivial injuries. There are many patients in whom this condition is easily recognized, but there are many cases with obscure symptoms, so much so that no suspicion is raised as to the true nature of the condition. The patient in whom the symptoms come on so insidiously may be diagnosed as a traumatic neuroses or even as one suffering a sufficient mental disturbance to warrant the supervision of an asylum. To me this is an interesting and strange process, in that there is a definite encapsulation by thin membrane of blood, noted in various stages of clotting. The size of this hematoma increases gradually, seemingly due to osmotic tension of blood proteins contained in the cyst through the membrane surrounding this clot (this membrane apparently coming from the arachnoid). We must not overlook the fact that this condition may be bilateral.

The formation of this type of hematoma is usually noted in older people. However, it occurs at all ages, including the infant. I emphasize the symptomatology following a head injury, of a latent



period, usually of several weeks, (though in the more severe cases it may develop within a few hours). The term "chronic" in the more rapidly developing cases, is hardly applicable from the standpoint of time, yet the pathology is different from the ordinary extra dural or meningeal hemorrhage. Noting in some of the cases the early formation of the covering of this hematoma, it would appear that we are dealing with a hemorrhage which separates the layers of what ordinarily is a very thin arachnoid. The more insidious onset, where symptoms do not develop for possibly a year or so, tax the diagnostician most, and worries the surgeon who has possibly cared for this patient at a time when trauma to the head occurred without the development of symptoms within our ordinary conception of a reasonable time following this injury.

The treatment is simple so far as any intracranial work is concerned and with the ordinary careful technique, patients are cured by surgery. Exploratory trephining is indicated in suspicious cases; in fact, I feel that too little exploration is done in patients where intracranial lesions are suspected, and diagnoses only partial-ly established.

The X-ray is of wonderful assistance when made under proper technique and gives one much definite information without submitting the patient to any special hazard.

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*Dr. Walter Hardy, Ardmore.*

I have enjoyed the description of this condition. I had one case that I operated on many years ago. There was a dilatation of the pupil on the left. History of a fight. For two or three weeks before he came into my hands—he lived out in the country—he had such persistent headaches that they finally brought him into the hospital and after studying the case for two or three days I came to the conclusion that he had a hematoma on the left side. I did a sub-temporal decompression and he had a large hematoma. The blood seemed to be dried. There was no moisture about it. I washed it out carefully with normal salt solution and he made an uneventful recovery. This has been so long ago that I cannot give the exact findings, but I know the spinal pressure was about twenty-two millimeters pressure with no blood in the spinal fluid, but he had the persistent headaches and there had

been loss of sensation in both hands. I operated on him for compression; at the time I did not know just what it was. I certainly enjoyed this very careful study Dr. Wilkins has made of these cases, and I wish to congratulate him.

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*Dr. Horace Reed, Oklahoma City.*

We have been rather too dogmatic in our classification of injury to the brain. Perhaps it has been necessary for the purpose of teaching. The classifications are first, concussion; second, compression from hemorrhage; third, contusion. In order to get the picture over we have separated them. Now practically we find that all three of these conditions are usually present. Of course, concussion is a symptom although we class it as a division. We do it because certain persons are momentarily disturbed for a few seconds or a few minutes and then consciousness apparently leaves them. Sometimes we are faced with subsequent events that very much disturb us. In the average case of concussion in which there is unconsciousness over a period of a few minutes you often see a disturbance of brain functions, or pain that persists, and in the light of our old conception of these conditions we all too often have classified them as compensationitis when as a matter of fact they actually had trouble, either contusion or hemorrhage. Just recently a very prominent man in this city was injured in an automobile accident and died a few days later, supposedly of pulmonary complications, but it was learned with surprise at the autopsy that he had a subdural hemorrhage with multiple hematomas. We see instances in which there are symptoms that persist and we are prone to ignore these things. I am reaching the conclusion rather rapidly that any person who has suffered a brain injury should be kept rigidly under observation, not a few days alone, but for weeks. I lapsed in that determination just recently, much to my regret. A friend of mine insisted that I should see him at the University hospital following an automobile accident, and when I saw him he was apparently clear mentally, but he went out on my permission and for weeks and weeks following that he had persistent headaches which fortunately gradually grew less and less and apparently he is about normal now, but I am not sure yet but what we will hear from that later. These old cases of epilepsy that come on months or years

after the injury are due to somebody's ignorance or negligence. The doctor has well demonstrated by these cases just what takes place. One of them was a case I referred to him. With that patient, I was non-plussed the first time I saw him because I couldn't get a history which indicated a history of brain injury. I questioned the family and they lead me to believe he had had an attack of the flu, and I left there thinking perhaps he had encephalitis although he had focal signs more on one side than the other. Some hours later they called me up and apologized. They had recalled that he had fallen on the ice some three months before, from which date he had had more or less headache. That is an example of what takes place rather too frequently, particularly when we must admit we all too often overlook them.

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*Dr. L. C. Vance, Ponca City:*

I want to ask a question of Dr. Wilkins rather than discuss this paper. I am very much interested in this subject. Not long ago he saw a patient who had been a patient of mine for many years. There was one particular about that history I don't know whether Dr. Wilkins got. This patient was unconscious when I was called to see him. Twenty-four hours after the injury he was perfectly conscious but that night or the next day he lapsed into complete unconsciousness again and was that way when Dr. Wilkins saw him. I would like to know whether Dr. Wilkins thinks the initial blow on the head at the site of later hemorrhage probably caused him to become unconscious again.

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*Dr. Wilkins:* In regard to some remarks that Dr. Reed made as to classification of intracranial injuries, I think he stressed this very nicely. It is a fact that we have tried to think in terms of clear-cut concussions, concussion or hemorrhage rather than consider them as a group together, one shading off into another. I am certainly glad he mentioned those things as he did, particularly about rigid observation over a period of time, and not only observation, but make certain that the patient adheres to your advice as to the length of time that he should rest. A number of the persistent headaches and convulsions and disabilities will be avoided if you give nature a chance to help. Subarachnoid hemorrhage produces a blood

tinged fluid and should be removed by spinal puncture not at the time of the injury or a few hours thereafter, but only after the intracranial pressure has been cared for either by glucose intravenously or with magnesium sulphate retention enemas. In regard to Dr. Vance's question, I am glad he brought out this factor of interval of consciousness. This man, as I recall, was not knocked unconscious immediately. He did attempt to move after he struck the ground but was unable to rise because he could not use the right side. I think he did lapse into a state of unconsciousness for a time. On the following morning he was still able to say a word or two, but after he lost consciousness again he did not regain his speech or move the right arm or leg. I think that this man suffered injury to the brain substance itself. It is possible that he had the disturbance of consciousness which one might ordinarily classify as concussion, for he was out for a time, then recovered, and then with enlargement of the hematoma I think the second loss of consciousness was due to pressure from the blood. I want to thank these gentlemen very much for their kindness in discussing my paper and for their kind remarks.

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#### WHAT EVERY WOMAN DOESN'T KNOW— HOW TO GIVE COD LIVER OIL

What every woman doesn't know is that psychology is more important than flavoring in persuading children to take cod liver oil. Some mothers fail to realize, so great is their own distaste for cod liver oil, that most babies will not only take the oil if properly given but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is administered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

The mother who wrinkles her nose and "makes a face" of disgust as she measures out cod liver oil is almost certain to set the pattern for similar behavior on the part of her baby.

Most babies can be taught to take the pure oil if, as Eliot points out, the mother looks on it with favor and no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of cod liver oil may be followed by orange juice, but if administered at an early age, usually no vehicle is required. The oil should not be mixed with the milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bowl.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in 1-3 to 1-2 the usual cod liver oil dosage.

(To be continued)



## THE ATROPINE TREATMENT OF POST ENCEPHALITIC PARK- INSONIAN SYNDROME\*

FELIX M. ADAMS, M.D.

Medical Superintendent

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VINITA

In June, 1929, the atropine sulphate treatment of the post-encephalitic Parkinsonian syndrome as developed in the sanitarium of Dr. Romer of Hirsau, was made public. These experiments were based on the findings of Bremer of the hyposensitiveness of patients suffering with Parkinsonian syndrome, following encephalitis lethargica, to atropine.

Dr. Romer treated 35 patients, 29 being incapacitated for work and 19 in need of personal care. At the end of the treatment 23 were able to work and all were able to care for themselves. Stempler of Munich reports 26 cases treated with similar results.

At the Oklahoma City meeting of the State Medical Association, May 13th, 1931, we presented a report of 21 cases of Parkinsonianism treated in the Eastern Oklahoma Hospital with atropine. Since that report we have treated an additional 14 cases in the institution and 35 private cases. In that article we called attention to certain toxic symptoms that occurred in some patients, such as nausea, vomiting, paralysis of the bladder and intestinal tract. The bladder became badly distended and had to be relieved by catheterization: however, the distension of the abdomen could not be relieved by any treatment and it became necessary to take the cases off the atrophine altogether—then the symptoms would subside in about twenty-four hours.

During the past year we have modified the dosage and have overcome the above symptoms. Using a .5 of 1 per cent solution of atropine sulphate, beginning with 1 minim of the solution in a half glass of water, three times a day, increasing the dose 1 minim a day until the fourth day, then 4 minims a day for three days, then increase another minim a day until the tenth day when 8 minims are given for three days. On the thirteenth day the dose is continued at the rate of

increase of 1 minim a day until the optimal dose is established—this is usually between 12 and 18 minims given three times a day.

Each case must be studied to determine the correct dosage—the quantity which just suffices to produce and to maintain physical and psychic euphoria. One, therefore, first determines the size dose which no longer produces a noticeable improvement. The dose is then decreased 1 minim a day until a feeling of well-being is obtained. The optimal dose lies in between.

The atropine affect is more noticeable during the first ten days of the treatment. The gait becomes more free, the posture more erect, the mask-like appearance of the face relaxes and the eyes no longer so staring. The patients soon can feed themselves, comb their hair and dress themselves—something many have not been able to do for years.

The results of our treatment of 70 cases is as follows: Rigidity was practically removed in 35 per cent of cases and greatly improved in 50 per cent. Tremor was practically abolished in 50 per cent and greatly improved in 35 per cent. Gait and speech disturbance was remarkably improved in 95 per cent of our cases. Oculogyric spasms, one of the most distressing symptoms, have been controlled in nearly all cases. Improvement in the physical condition of 90 per cent of cases is recorded.

Anyone who has seen these helpless, distorted, vegetative invalids awakened from a stupor of 10 or 12 years by this treatment, and again become men and women with a certain amount of vigor, joy in life and pleasure in play and work, will be convinced of the great advantage of this treatment over all others. A large per cent of the cases may be restored to a useful life by carrying on their treatment in their homes.

DISCUSSION: *Dr. Ned R. Smith, Tulsa.*

Certainly, there is not a great deal to discuss about this topic. The best way to discuss this paper would be for us to go to Vinita and talk to the patients there. I have been thinking of some of the patients I have seen in the years gone by. Strange to relate I had one case which did not respond to any treatment except atropine. Sometimes you will find if the patient does not respond to one treatment, he will respond to another. It is no small

(Read before the Medical Section, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, May 15, 1933).

## MYASTHENIA GRAVIS

COYNE H. CAMPBELL, A.B., M.D.  
OKLAHOMA CITY

achievement to rescue these patients from their state of utter despair.

I have seen about 300 cases of this particular disease in my lifetime. The most interesting thing is to talk to the patient in person before Dr. Hays and Dr. Adams begin to take care of them.

*Dr. E. S. Goldfain, Oklahoma City.*

I wish to confirm what Dr. Adams has said about this condition being treated with atropine. I have tried some in my private practice and also some at the University Clinic. Generally the response of patients is good. Before this method of treatment came to my knowledge, they used hyoscine and that controlled the patient quite well. The most evident improvement follows from the proper administration of atropine sulphate. I think atropine sulphate in 1/2% solution, given properly and increase of dosage one drop per day, watching the patient carefully, and you will be pleasantly surprised at the response of the patient to that form of medication.

*Dr. Pigford, Tulsa.*

Atropine fever has been described following the use of atropine.

I would like to ask Dr. Adams whether he has had such an occurrence?

*Dr. Adams:* We have never had any increase in temperature while the patient was on treatment or afterwards. I had a report from a hospital where about one-half of the cases ran a temperature and a large percentage developed a high blood pressure. Some German investigator reported an increase in temperature and blood pressure, but we have never had any increase in temperature or blood pressure.

### R. B. DAVIS COMPANY—COCOMALT

Cocomalt suggests something new and interesting in the diet of the convalescent. It is so much more delicious than milk alone. Even those who dislike milk, refuse to drink it, welcome the refreshing, chocolate-like flavor of Cocomalt.

More important, however, is the fact that cocomalt substantially increases the caloric value of milk. Prepared according to the simple label directions, Cocomalt adds 70% more food-energy value to milk—so that every cup or glass a patient drinks is equal in caloric value to almost two cups or glasses of milk alone.

Being both palatable and digestible, Cocomalt is tolerated even by the sick. It is ideal in prolonged illnesses when the weakened digestive system is able to cope only with the most easily digested, readily assimilated liquid foods.

Recent reports of Edgeworth<sup>1,2</sup>, Boothby<sup>3,4</sup>, and others relative to the therapeutic effects of ephedrine and glycine upon the course and symptoms of myasthenia gravis have stimulated a renewed interest in this clinical syndrome. Formerly, this disease was placed into the category of "incurable rarities," but in the light of later developments, it seems probable that myasthenia gravis is neither incurable nor quite so rare.

The disease was first described by Wilkes in 1877, as "*Bulbar Paralysis Without Anatomical Changes.*" In 1878 Erb reported three cases. Jolly, in 1891 established the disease as a clinical entity and named it "Myasthenia Gravis Pseudo-paralytica." It was at this time that he described the myasthenic electrical reaction of Jolly, which consists of a rapid diminution and cessation of response of muscles during stimulation by the faradic current. This was thought to be a specific reaction for myasthenia gravis, but it has since been found to occur in other conditions<sup>5</sup>.

In 1893, Goldflam and Strumpel reported twenty cases. More than 300 cases are reported in the literature, and several excellent reviews have been written, (Campbell and Bramwell<sup>6</sup>, Buzzard<sup>7</sup>, Keschner and Strauss<sup>8</sup>, and others).

The name myasthenia gravis, meaning grave weakness of muscle, is apropos, at least to the general impression that obtains after examination of a severe, fully developed case.

The onset is usually insidious. As a rule, the first symptom recalled by the patient is fatigue, that comes on after slight exertion. Other early symptoms are, tachycardia and palpitation, insomnia, vertigo, and emotional instability. At this stage the disease is commonly diagnosed "neurasthenia," or "neurocirculatory asthenia."

After a variable time, the more manifest symptoms begin to make appearance. Diplopia, resulting from disturbance of the extraocular muscles, occurs as the first complaint in fifty per cent of the cases. Any muscle or muscle group may first become involved. Generally those muscles supplied by the bulb are most fre-



quently affected. Quite commonly the cervical muscles are predominantly involved, and the chief symptom is a pronounced weakness of the neck. Depending upon the extent of bulbar muscles being affected, the symptoms of dysphagia, nasal speech, difficulty of mastication, and facial weakness make appearance. Ptosis, unilateral or bilateral is very common, and frequently an early symptom. All of the muscles supplied by the seventh nerve may become involved, giving rise to an "ironed-out" facial expression.

The muscles of mastication may become so severely affected that the patient must use the hands to aid in the movement of the jaw for chewing. The dysphagia may progress to such a degree of severity, that tube feeding is necessary. Although the bulbar, ocular, and cervical muscles are usually the first to be predominantly affected, the condition may progress until the trunk and limb muscles are involved, leading to total inability to walk, or to difficulty in maintaining the erect position. As a rule exitus occurs from the paralysis of the respiratory muscles and a subsequent complicating pneumonia.

Smooth muscles may also be affected. Involvement of the cardiac muscles, give rise to marked "heart weakness," palpitation, and attacks of syncope. Emotional instability is a very common finding in this disease.

Myasthenia gravis is characterized by frequent remissions. The severity of the condition may vary from day to day. The patient is almost invariably better during the early morning hours. The symptoms improve after rest; for example, ptosis and diplopia, which are very common symptoms may be absent during the morning, and gradually develop as the day progresses.

Diplopia and dysphagia are generally the most annoying symptoms in the earlier stages of the disease. A nasal speech resulting from an involvement of the palatal muscles, may render it very difficult for the patient to talk. Owing to weakness of the accessory swallowing muscles, there is a characteristic, almost pathognomonic craning movement of the neck during swallowing. Food may be regurgitated through the nose.

The neurological findings are negative. Reflexes are normal. Detailed examination reveals no disturbance of the peripheral or central nervous system. There

is as a rule no demonstrable atrophy of muscles.

The most striking finding is an apparent rapid fatigability of the muscles involved. The myasthenic electrical reaction of Jolly, is invariably present, and is of aid in the diagnosis. In most cases there is a lowered sugar tolerance. There may be creatinuria even when the patient is on a creatine and creatinine free diet. This is not a constant finding, and is of more frequent occurrence in the muscular dystrophies.

Nothing is definitely known as to the etiology of myasthenia gravis, although various theories have been advanced. The onset is usually between the ages of twenty and thirty, but may occur as late as fifty. It is interesting to note that no cases have occurred before puberty. There seems to be no evidence that the disease is familial or hereditary. The symptoms may follow an attack of acute fever, typhoid, influenza, and other febrile diseases, but there is no evidence that there is an etiological connection. The disease is slightly more common in women. Pregnancy may exert favorable, or unfavorable influence upon the course of the disease<sup>9</sup>. The symptoms are often worse during the menstrual periods.

Various authors have pointed out the possible relation of myasthenia gravis with disturbance of the thyroid. Cohen and King<sup>10</sup> report a case of exophthalmic goitre with myasthenia gravis. They indicate the pathologic similarity of the two conditions and report twenty-four other cases of myasthenia gravis associated with exophthalmic goitre.

The thymus gland is enlarged in about fifty per cent of the cases of myasthenia gravis. Osnato and Alter<sup>11</sup> give a report of post mortem examination on a case which revealed multiple granulomas of the thymus and general hyperplasia of the lymphatic system.

Querido believes that myasthenia gravis is a general vascular disease, a "vasculitis chronica proliferans," inasmuch that there is frequent round-celled infiltration about the external coat of the blood vessels.

Hypoplasia and diminution in the size of the suprarenal glands is almost a constant finding. Bernhardt and Simpson<sup>12</sup> have reported favorable results from treatment with eucortone, a suprarenal

preparation. It is interesting to correlate the extreme weakness found in Addison's disease, a condition of hypoadrenalism, with the small adrenals and fatigability found in myasthenia gravis.

Abraham<sup>13</sup> has recently described a new eye finding which he considers to be a diagnostic test. This consists of, "the irregularity in the amount and quality of the heterophoria in the short span of a few moments, the irregularity in duction readings, the unusually high duction readings, the close proximity of the images when diplopia is produced, the approximation of the amount of prism used in creating the diplopia, the hyperphoria as measured by the Maddox rod test, and the actual turning of the eye in the direction of the apex of the prism." Abraham concludes from these findings that myasthenia gravis is not a true myasthenia.

This test was performed by Dr. James R. Reed, eye specialist of Oklahoma City, on the case to be reported in this paper. The findings of Abraham were corroborated entirely.

The chief pathological findings in myasthenia gravis is the condition known as lymphorrhagia of the muscles. This consists of mononuclear cell-collections that occur within the interstices of the muscle fibers. It has been observed in the liver, spleen, stomach, and other viscera.

Abnormal findings are not present in the central nervous system. Vacuolization of the cells in the oculomotor nucleus has been found in one case.

Enlarged thymus, hypoplasia of the suprarenals, and general hyperplasia of the lymphatics have already been mentioned. In extremely chronic cases, the muscles may show some atrophy. Querido has reported a case in which there was malformation and misplacement of the thymus and parathyroid bodies.

The course of the disease is very irregular. As previously mentioned, remissions are common. Each succeeding attack, however, tends to become more grave. Cold weather, stressful emotional environment, and excessive muscle strain unfavorably influence the ultimate outcome.

There are a few cases reported from which recovery has been complete, but the great majority have progressed gradually, to end fatally by respiratory failure. Death may be sudden, yet with proper

rest and care, some cases have been known to have lived more than twenty years.

In fully developed cases, the diagnosis should be fairly easy. The disease is usually mistaken for hysteria and neurasthenia during the early stages. With the onset of diplopia and history of influenza, post-influenzal encephalitis is to be ruled out. True bulbar palsy more nearly simulates myasthenia gravis, but the crenated, fibrillating tongue, the atrophy of the muscles involved, the lack of remissions, the lack of improvement with rest, and the electrical reactions, serve to make a differentiation. Diphtheritic polyneuritis is also to be considered. Tumors of the mid-brain in the region of the superior colliculus may produce eye findings which resemble those of myasthenia gravis, but the neurological changes, the true muscle paralysis, the choked disc, and other symptoms are not present in myasthenia gravis. The various types of facial palsies present no difficulty in differentiation. In the myopathies, the external ocular muscles and bulbar group are never affected. Chronic spinal muscular atrophy, Landry's paralysis, and the so-called chronic poliomyelitis are distinguished by the presence of flaccid paralysis and the reaction of degeneration.

Until the recent discovery of the use of ephedrine and glycine; moderate climate, rest in bed during exacerbations, strychnine in large doses, wholesome well-balanced diet, and various empirical gland extracts, were the only measures advocated in the treatment of the disease. As above mentioned, tube feeding may become necessary in the severe dysphagia. Artificial respiration might also be of value in the terminal stages.

In 1930, Dr. Harriet Edgeworth<sup>1</sup>, a victim of the disease, accidentally discovered the use of ephedrine for the treatment of myasthenia gravis. She reported a remarkable beneficial result from the use of this drug. Her second report<sup>2</sup>, after three years of treatment, with a daily consumption of 6-8 grain of ephedrine sulphate (with a few daily omissions of the drug) finds her improvement to be gradually progressive. She notes a definite diminution of severity in her symptoms at about six months intervals. Her status has now changed from a condition of almost total helplessness to an acquisition of ability to carry out the routine duties of her life. Even after three years, however, she finds



that omission of the drug is very quickly accompanied by recurrence of the myasthenic symptoms.

Boothby and others<sup>2</sup>, have reported results from the use of ephedrine, ephedrine and glycine, and glycine alone in treatment, and report favorable results. Glycine or glycoll, is given in doses of 15 to 20 grams each day. Attention should be called to the fact that there is a photographic developer sold under the trade name of glycine, which is distinctly poisonous, and which must not be confused with the amino-acid glycine, (glycoll).

Some cases show improvement with treatment on glycine alone, and this is especially valuable in those patients who cannot tolerate ephedrine. Other cases show better improvement on the combination of ephedrine and glycine, whereas most cases seem to do better on ephedrine alone.

From 3-8 to 6-8 grain of ephedrine is taken daily, depending upon the tolerance of the patient. Fifteen to twenty grams of glycine seem to be the optimum dose of this drug.

Owing to the frequent remissions of the disease, it is necessary to be guarded, in our opinion, as to effects of drugs used in the treatment. Only the future will disclose the permanency or failure of results. The evidence is in favor of the fact, however, that ephedrine does produce permanent beneficial effects. It is certain that it should be tried in all cases of myasthenia gravis.

#### CASE REPORT

M. T., age 27, female. Patient was first seen February 23, 1933.

##### *Complaints:*

- (1.) Double vision, nine months duration.
- (2.) Difficulty in swallowing, six months.
- (3.) Nasal speech, six months.
- (4.) Weakness of the lower extremities, eight months.
- (5.) Weakness of the upper extremities, two months.
- (6.) Extreme weakness of the neck muscles, two months.
- (7.) Palpitation of the heart and extreme nervousness, nine months.

#### COURSE

The patient states that she developed double vision rather suddenly about nine months ago, at which time she consulted an optometrist, in the hope that lenses would correct the defect. After two trials, the optometrist told her that glasses would be of no benefit. Shortly after this, she began to notice a weakness of the extremities, especially marked in the lower extremities, but noticeable in the hands and forearms. This weakness of the extremities has been getting progressively worse during the last four months.

About six months ago, she began to develop difficulty in swallowing. At about the same time, she noticed that her speech became nasal in type, and that her eyelids began to droop. Recently, she has also noticed a very definite weakness of the jaw muscles. After chewing for a few minutes, she has great difficulty in closing her mouth. Often it becomes necessary for her to finish mastication of food by movement of her jaw with her hand.

The most striking aspect of her symptomatology is the fact that she is invariably better upon rising. All symptoms of muscular weakness become worse as the day progresses. Since the onset of her muscular weakness, she has become very excitable and often experiences severe palpitation of the heart.

#### PAST HISTORY

The patient has been married four years, but has had no children. There have been no miscarriages. Her husband was married previously, and has had four children by his first wife. There is nothing of special importance in the family history. So far as the patient knows, none of her relatives have been afflicted similarly to her present illness. The patient has had the ordinary diseases of childhood. There is no history of influenza or any other illness for one year prior to the onset of her present trouble. The patient had a tonsillectomy seven years ago. She has had no other surgical operations.

#### SYMPTOMATOLOGY BY SYSTEMS

General nervousness and excitability. Palpitation of the heart after slight exertion. No headaches. No tremors. No history of muscular twitchings. No cough. No gastrointestinal complaints. No polyuria, polydipsia, or nocturia. No disturb-

ances of sexual libido. General muscular weakness as described above.

#### PHYSICAL EXAMINATION

Reveals a fairly nourished, white, female about thirty years of age, weighing 104 pounds. There is no evidence of skin abnormalities. The nails are normal. No palpable lymphadenopathy. The patient is intelligent and able to give a clear account of her illness. Pupils are equal and react to light and accommodation. There is a slight but definite impairment of ocular movements in a lateral direction. Diplopia, although present at the time of examination, became exaggerated after the patient performed repeated lateral movements of the eyes. Marked bilateral ptosis is present. The facial muscles are bilaterally weak, more especially the orbicularis oculi. The facial expression has an ironed out appearance, owing to the laxity of the facial movements. The masseters and temporal muscles contract well and are not atrophied. The voice is strikingly nasal in tone, rendering her speech difficult of comprehension. The palate moves on phonation, but is easily fatigued. There is marked disturbance of swallowing. When the patient attempts to swallow liquids, the fluids are regurgitated through the nose unless sufficient time is allowed during swallowing for the accessory muscles to be brought into play. There is a marked weakness of the neck muscles, and the patient cannot maintain an upright position of her body more than a few minutes at a time. Muscular atrophy is entirely absent. Motor power in the upper limbs is greatly impaired, especially in the flexion movements of the fingers. There is no evidence of impairment of power of the abdominal and intercostal musculature. There is definite motor weakness in the extensor muscles of the lower limbs. Weakness in the limb muscles becomes rapidly more marked after active motion. The patient is practically confined to bed. The remainder of the physical examination is essentially negative. Vision does not seem to be impaired. The nose, throat, mouth, and teeth seem to be in good condition. The thyroid gland is slightly palpable. The chest does not show any special abnormalities. The lungs are negative. Heart normal in size. There are no murmurs. Pulse rate 84, full and regular. Blood pressure 129-80. Abdomen essentially negative. Gynecological examination negative. Secondary sexual characteristics normally developed. A fluoroscopic

examination of the chest did not reveal an enlarged thymus.

#### NEUROLOGICAL EXAMINATION

The neurological examination is essentially negative. The deep reflexes are present and equal on both sides. The superficial reflexes are actively present. There are no disturbances of sensation. In testing for the knee jerk, taps on the patellar tendon repeated rapidly in succession, was followed by a definite decrease in the amount of extension.

#### ELECTRICAL REACTIONS

No reaction of degeneration was present. The myasthenic reaction of Jolly was determined in the forearm muscles.

#### LABORATORY EXAMINATION

Blood count essentially normal. Urinalysis essentially normal. Quantitative analysis of urine for creatine and creatinine revealed normal quantities of both of these substances. Blood Wasserman, negative. Colloidal Gold curve, normal.

#### DIAGNOSIS

From the above findings, this was considered to be a classical case of myasthenia gravis. The typical history, course, increased fatigability of muscles, absence of neurological findings, absence of R-D, and the myasthenic reaction of Jolly, pointed more or less conclusively to the probable correctness of the diagnosis. The negative serology, and spinal fluid with no history of luetic treatment, rules out the probability of syphilis. Subacute epidemic encephalitis and bulbar palsy are also to be considered. The latter two conditions give a different history, muscular atrophy is usually present, the R-D is present, and as a rule, the course is more rapid.

#### TREATMENT

On February 27, 1933, the patient was placed upon ephedrine sulphate grains 3-8, morning and night. She was ordered to remain in bed for a few days, and given a well-balanced, wholesome diet.

On March 8th, ten days after the beginning of this treatment, the patient showed a remarkable improvement. Her double vision and ptosis had entirely disappeared. The weakness in her lower extremities had also greatly improved. She was kept in bed awaiting a trial treatment with glycine.

During her stay in bed, she was given 20 grams of glycine per day over a period



of ten days. The full dose of ephedrine was continued at that time. After the treatment with glycine was completed, the patient was allowed to be up in order to determine whether or not her improvement had been brought about by the medicine or the rest in bed.

It was immediately discerned after she was allowed to be up, that a very remarkable improvement had occurred. While taking the ephedrine 3-8 grain, twice per day, she was able to be up and carry on the usual routine of her household duties without any debilitating motor weakness.

Since April 9th, 1933, the patient has been taking two 3-8 grain capsules of ephedrine per day for one week, followed by one 3-8 grain ephedrine capsule per

to omit the ephedrine entirely for one week. Figure 1 shows the result after discontinuing the drug. Figure 2 is a photograph taken one week later, during which time the patient was taking 6-8 grain of ephedrine daily. Note disappearance of ptosis, and improvement of facial expression.

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FIGURE I

day the following week, and one 3-8 grain ephedrine capsule every other day the third week. This course of treatment has been repeated since April 9th. At present she shows continued improvement in her condition, the only remnants being the difficulty in swallowing, nasal speech, and residual weakness of the flexor forearm muscles. The ptosis and diplopia have entirely disappeared. The weakness in the lower limbs is never noticeable excepting during the time that she is taking only one ephedrine capsule every other day. There seems to be a gradual improvement in all of her symptoms.

A photograph of the patient was not taken before treatment with ephedrine. After five months of treatment, as outlined above, the patient kindly consented



FIGURE II

5. Wechsler, I. S.: *Textbook of Clinical Neurology*, Page 358, W. B. Saunders & Co., 1930.
6. Campbell, H. and Bramwell, E.: Myasthenia Gravis, *Brain* 23:277, 1900.
7. Buzzard, E. F.: The Clinical History and Post-Mortem Examination of Five Cases of Myasthenia Gravis, *Brain* 28:438, 1905.
8. Keschner, M. and Strauss, I.: Myasthenia Gravis, *Archives of Neurology and Psychiatry*, 17: 337, 1927.
9. Laurent, L. P. E.: Myasthenia Gravis, Remissions and Relapses Associated with Pregnancy, *Lancet* 1:753, April 4, 1931.
10. Cohen, S. L. and King, F. H.: Myasthenia Gravis, Relation to Exophthalmic Goitre, *Archives of Neurology and Psychiatry*, 28:1338-1345, December 1932.
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12. Bernhardt, H. and Simpson, S.: Relation of Suprarenal Cortex to Myasthenia Gravis—Therapy of Myasthenia Gravis with Eucortone. *Klin. Wechnschr.*: 2069, December, 1932.
13. Abraham, S. V.: Myasthenia Gravis; New Diagnostic Eye Findings with Possible Pathologic Significance, *Archives of Ophthalmology*, 7:700-719, May, 1932.

# THE JOURNAL

OF THE

## Oklahoma State Medical Association

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Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, 203 Ainsworth Building, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

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### EDITORIAL

#### FEDERAL EMERGENCY RELIEF FUND FEE SCHEDULE

The latest information it has been possible for us to obtain relative to the set up for payment of medical fees from the Federal Relief Fund is to the effect that there has been no action as yet taken by our State Administrator. It will be necessary, after action has been taken by him, that this be sent to Washington for approval.

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#### SEE YOUR SECRETARY AND PAY YOUR ANNUAL DUES

Please remember that all memberships

automatically expire December 31st, of each year and that you are carried in good standing only until February 1st. At that time your dues become delinquent and there is a penalty of \$2.00 attached.

Prompt payment of all dues greatly facilitates the work of your County Secretary, your State Secretary, and the Secretary of the American Medical Association. Consequently, pay your dues promptly, thereby saving yourself embarrassment and your officers unnecessary work and inconvenience.

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#### POST-GRADUATE MEDICAL TEACH- ING IN OKLAHOMA

In discussing the subject of Post-Graduate Medical Teaching in Oklahoma I shall quote very freely from the report of the Committee on Medical Education, published in 1932. This committee was composed of A. Lawrence Lowell, President of Harvard University; Walter L. Biering, President-Elect of the American Medical Association; George Blumer, former President of the Association of American Medical Colleges; Hugh Cabot, also former President; Samnel P. Capen, Director of the American Council of Education.

In considering an adequate program of medical care for a community, emphasis must necessarily be placed upon competent physicians who are familiar with current knowledge regarding diagnosis, treatment, and prevention of disease, and upon the importance of every physician continuing to be a student throughout his professional life. Knowledge cannot be distributed as other commodities might be and medical service cannot be delivered except through trained personnel.

Many enthusiasts for the organization of medical services fail to appreciate fully that the successful development of adequate medical services in any community depends in the last analysis upon the training and ability of the professional personnel. Knowledge is not static and each year many new discoveries and concepts of diseases and health are brought forward. Much of the present day medical information has actually been acquired within the recollection of physicians now practicing, and it is true that many physicians now in practice received their medical training before these contributions to the medical sciences were made or their



value widely appreciated. Many continue to practice as they were taught when students. Many have shown little interest in keeping abreast of the newer developments in medicine.

In order that a physician may be able to advise his patient as to the necessity for special examinations or treatments, he should be kept familiar with sound, up-to-date scientific methods of diagnosis, treatment and prevention, and with the indications, value, and limitations of special examinations and forms of therapy. Keeping physicians aware of and competent to use new knowledge and methods is one of the most important factors in a complete and satisfactory medical service for a community.

Every physician must continue to be a student throughout his professional life if he expects to be scientifically successful. The responsibility must be shared by the medical profession and the medical schools if they are to work out this essential feature of public service, and if this service in the last analysis is to be continued the State also has a decided responsibility along this line. The practical difficulties of providing the necessary opportunities and teaching groups and then of getting the physicians to utilize them is the problem which we make an effort to solve.

There is need of short advance courses of at least two types. The first is for those who are already trained and practicing a specialty, for whom short intensive courses at teaching centers are most satisfactory. The second is for the general practitioner for whom the courses may be short but designed to help the general practitioner improve his ability in diagnosis and nonspecialized treatment.

The quality of medical service depends largely upon the extent to which physicians keep abreast of new knowledge and methods for the diagnosis, treatment and prevention of disease; the continuation and post-graduate training of physicians is a vital part of an adequate program of medical services for the country, to which the medical profession, institutions and the State should devote more attention. There are three major phases of post-graduate education: First, the training of specialists under competent supervision; Second, short advanced courses at teaching centers for recognized specialists, and general practitioners; Third, the continued training of physicians in practice

through various forms of extension education, as the itinerary or circuit courses.

The most important and largest part of the program should be directed toward taking educational opportunities to the practicing physician in his own community or to centers to which he can go without leaving his practice.

Now that these problems have been placed squarely before us let us see what has been done in Oklahoma toward its solution and in giving this information I will quote from a report made by the Director of Post-Graduate Medical Study of the University of Oklahoma:

"The first post-graduate medical course, under the extension method was organized in Oklahoma during the autumn of 1925. The course was organized under a circuit plan, and while it was rather an experiment it was so successful that the instructor was engaged for one year to give other circuits on the subject of pediatrics, and slightly over a thousand physicians took advantage of this course. After the course of pediatrics others followed in the subjects of internal medicine, obstetrics, surgery, tuberculosis, urology, with some specialized subjects for the eye, ear, nose and throat specialists.

Proposed centers for these circuits were tentatively selected by the University Extension Division. After consultation with the members of the county medical societies and the subject matter to be offered was approved, the instructors were selected by a committee appointed by the President of the University. This committee was appointed from the school of medicine.

The Extension Division administered the program from its physical standpoint and did the promoting and field organizing. This consisted of assisting, when possible, and locating instructors willing to come to Oklahoma to serve as faculties. The Extension Division later effected the business and financial arrangements with each instructor to be engaged; assembled the course; prepared the printing; accomplished the publicity and enrollment of the doctors.

In 1931 the State Medical Association paid one-half the cost of a course offered in six centers by a faculty of distinguished visitors to our State, while six County Medical Societies paid the other half. Doctors were invited to attend these courses without fees.

In 1932 the State Association financed half the cost of two courses in eleven centers, the County Societies paying the other half. An appropriation was made by the State Association to finance two courses in 1933.

During the year 1929, officers of the State Medical Association of Oklahoma approached the Extension Division on the proposition of servicing and encouraging the use of medical and surgical motion picture films among the County Medical Societies in the State. The State Association purchased the films from time to time, all films being approved by the Committee of the American College of Surgeons. The Extension Division serviced the films, booked them and they were sent to the County Societies without cost, except that of transportation from Norman to the Society and return. Where local operators were not available extra charges were made for the expense of the operator. This arrangement bringing to the County Society the films with a minimum charge. These films have been widely used throughout the State and have also been used by the instructors of the Oklahoma School of Medicine faculty in connection with their teaching.

In 1932 a program of medical broadcasting was attempted over the University Broadcasting Station at Norman and many subjects of importance were discussed. These discussions were not only of interest to the profession but also to the laity and much favorable comment has been received concerning them. However, the present status of this station is quite unsatisfactory, owing to its small range reception, but we hope this may be corrected by the Federal Radio Commission and a more satisfactory wave length assigned. This of course will come slowly since the Federal Radio Commission has its problems with the very strong demands made upon them by the commercial interests of the nation.

In the Spring of 1933, a bulletin was prepared by the Extension Department under the advice of a committee from the faculty of the University and a committee from the State Medical Association. This bulletin gave the names and subject matter of many leading physicians and surgeons of the state that would be available for county society meetings. This bulletin was placed in the hand of every Secretary of the component county societies and many requests are now reaching the Ex-

tension Department for the service of these lecturers whose names appeared therein.

Another important feature of Post-Graduate Medical Teaching in Oklahoma, has been the Oklahoma City Clinics, sponsored by the Oklahoma City Clinical Society.

This Society was organized in 1930 by a group composed of members of the Oklahoma County Medical Society. Its main activity is the holding of an annual fall clinical conference, to which the doctors of the Southwest are invited. Each year this organization brings to the State the finest medical talent available in the United States, Canada, and abroad. These conferences offer to the medical profession of Oklahoma a quick, authoritative review of the newer facts and theories of medicine in a very short period of time, at a cost of only \$10.00 to each registrant. This registration fee does not begin to cover the entire expense of the conference, and the physicians of Oklahoma City, who are members, contribute from \$1500.00 to \$2,000.00 yearly to meet the expenses of this conference.

Each year about twenty prominent medical lecturers are in attendance and the average registration is between five and six hundred; eighty percent of these doctors are from Oklahoma, the other twenty per cent being distributed throughout the ten states in this section. These conferences have been held annually since the organization in 1930 and the attendance has increased each year.

Because there has been little or no appropriations in the State of Oklahoma for medical teaching under the extension plan, it has been necessary to make this program almost self-supporting from the fees paid by the doctors. These fees first ranged from \$30.00 to \$35.00, but with the changes in the economic status in our State it became necessary to reduce the fee to \$15.00 during 1930. This was felt expedient rather than lower the standards of instruction. Physicians are very quick to recognize any lack of quality or high standard in a medical program. This is a commendable requirement adopted by a profession devoting their lives to the science of medicine. However, it is necessary that courses in medical extension teaching be supported in numbers, for it is a co-operative program between the physicians and the University.

Since the organization of Post-Gradu-



ate Medical Teaching in Oklahoma \$91,-325.00 has been spent by the physicians in Oklahoma to meet the expense of carrying on this work. This amount does not include the money spent by the physicians in travel and hotel bills when in attendance at the post-graduate courses. The entire expense of the faculties, including their traveling expenses, hotel bills, etc., have been met by the physicians, the only money spent by the State has been a small amount each year in the administration of the courses.

The above statement of facts indicates very plainly the active interest of the organized medical profession in Oklahoma to improve themselves professionally, and it appears we have met the problem of post-graduate medical teaching by as good or a better plan than most any other state in the Union. Let us hope that there will be no interruption in this work, and that we will continue to receive the cooperation of the Medical Department of the University of Oklahoma, the Oklahoma State Medical Association, the Public Relations Department of the University of Oklahoma, and the regular practitioners of the State.

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### *Editorial Notes---Personal and General*

DR. S. P. ROSS, Ada, who has been ill is reported improved.

DR. T. H. McCARLEY, McAlester, addressed the State meeting of Nurses, at Ardmore in October.

DR. H. B. AMES, Alva, who underwent an operation at Rochester, Minn., recently, is reported improved.

DR. GEORGE L. DRIVER, Ponca City, has returned from Kansas City where he has been taking special medical work.

DR. W. W. KERLEY, Anadarko, has returned from Richmond, Va., where he attended the meeting of the Southern Medical Association.

DR. F. B. MEEK, Alva, who was injured in an automobile accident in early November, is reported showing only slight improvement.

DR. CHARLES P. BONDURANT, Oklahoma City, lectured to members of Garvin County Medical Society, at Pauls Valley, in October.

DR. AND MRS. WALTER HARDY, Ardmore, have returned from Rochester, Minnesota, where Dr. Hardy attended the Mayo Clinic.

DR. AND MRS. HERVEY A. FOERSTER, Ada, announce the birth of a son October 6th, to whom they have given the name David William.

DRS. W. C. WAIT, C. M. Pearce, V. H. Barton, and L. S. Willour, McAlester, spent the first week of the quail season in camp on the Canadian river.

DR. C. M. TRACY, Sentinel, is reported suffering from fracture of the right leg, and cuts and bruises on his face, received from an automobile accident.

DR. AND MRS. CURT VON WEDEL, Oklahoma City, have returned from a motor trip to Estes Park, Colorado, where they spent a week at their cabin.

OKMULGEE-OKFUSKEE COUNTY MEDICAL SOCIETIES met in Okemah, November 20th. Dr. Wann Langston, Oklahoma City, was the principal speaker.

DR. and MRS. C. E. NORTHCUTT, Ponca City, have returned from Chicago, where Dr. Northcutt attended the meeting of the American College of Surgeons.

DR. WINNIE M. SANGER, Oklahoma City, lectured before the first District of the Oklahoma Federation of Women's Clubs. Her topic was "Mental Hygiene."

THE WOMEN'S AUXILIARY to the Cleveland County Medical Society were entertained at a covered dish luncheon at the home of Mrs. Charles A. Brake, Norman, October 26th..

DR. E. E. YANCY, Sedalia, Mo., spent Sunday, November 19th, as the guest of Dr. and Mrs. Wm. P. Fite, Muskogee. Dr. Yancy is the Chief Surgeon of the M. K. & T. Railway.

DR. AND MRS. JOSEPH ANTONY, Lawton, have returned from a three week's trip to Fargo, North Dakota, and Omaha, Nebraska, and other points, visiting Dr. Antony's parents.

DR. A. J. WEEDN, Duncan, was reelected President of the Oklahoma State Hospital Association at the final session of the State meeting which was held in Oklahoma City in November.

DR. J. C. HAWKINS, Blackwell, has been appointed, temporarily, City physician, and Dr. R. L. Edmonds, Blackwell, was appointed assistant city physician to replace the late Dr. A. R. Havens.

DR. AND MRS. CHARLES HOLT, Ft. Smith, have returned from Chicago where Dr. Holt attended the meeting of the American College of Surgeons. They also visited the Century of Progress while in Chicago.

DR. HENRY TURNER, Oklahoma City, was a guest speaker of the Post-Graduate Medical Association of South Texas at its Fall conference, and addressed the Association November 24th on "Recent Advances in Endocrinology."

PONTOTOC COUNTY MEDICAL SOCIETY met November 15th and adopted a new Constitution and

By-Laws. The new Constitution contains sections covering Ethics, Advertising, and selection of new members. Annual dues were raised from \$5.00 to \$10.00.

DR. AND MRS. W. R. JOBLIN, Porter, announce the marriage of their daughter, Miss Willie Joblin to Mr. Victor F. Anderson, son of Mr. and Mrs. J. A. Anderson, both of Muskogee, November 18th, in Oklahoma City. They will make their home in Muskogee.

DR. AND MRS. W. ALBERT COOK, Tulsa, entertained informally November 12th, for their daughter, Mrs. Colin Leiter Campbell, and Mr. Campbell, of Chicago and Santa Barbara. Mr. and Mrs. Campbell will spend the winter months at their home in Santa Barbara.

MR. EUGENE L. VIDAL, Washington, director of aeronautics, announces the appointment of Dr. R. E. Whitehead, Indianapolis, as chief of the medical section of the aeronautics branch of the department of commerce to succeed Dr. Eldridge S. Adams, San Antonio, resigned.

OKLAHOMA COUNTY WOMEN'S AUXILIARY, Oklahoma City, reports the following officers: President, Mrs. Samuel R. Cunningham; Press and Publicity Chairman, Mrs. Henry W. Harris; Program, Mrs. A. L. Blesh; Health Education and Public Relations, Mrs. Gilbert L. Hyroop.

MRS. CLINTON GALLAHER, Shawnee, President of the Pottawatomie County Women's Auxiliary has appointed the following committees: Hygeia and Public Relations Chairman, Mrs. C. F. Paramore; Program, Mrs. J. E. Hughes; Flowers and Cards, Mrs. F. L. Carson. Mrs. John I. Gaston is Secretary of the group.

DR. AND MRS. CHARLES E. BARKER, Oklahoma City, have returned from a three-week eastern trip where Dr. Baker attended the American College of Surgeons, Chicago; Interstate Post-Graduate Medical Association, Cleveland; and then to Oxford, Ohio, where they visited their niece, Miss Vera Louise Holmes, a student in Western College.

GARVIN COUNTY MEDICAL SOCIETY met November 15th in the Chamber of Commerce rooms, Pauls Valley, for their regular monthly meeting. "Clinical Observations at Chicago Post-Graduate Clinic" were discussed by Dr. R. H. Lindsey. Election of officers was held and arrangements for the program of their next meeting were discussed.

MRS. A. W. ROTH, Tulsa, was hostess to the Women's Auxiliary of the Tulsa County Medical Society November 7th. The morning was spent in sewing for the Public Health Association and the Salvation Army Maternity Home. Mesdames H. Lee Farris, George R. Osborn and C. C. Hoke were hostesses at luncheon, after which Miss Gertrude Swanson of the Public Health Association gave a talk.

HARPER COUNTY DOCTORS AND DENTISTS met in Dr. Camp's office October 16th and formed a society to be known as Harper County Medical and Dental Society. Dr. Walker of Rosston was elected President, Dr. Nicholson, Laverne, Secretary-Treasurer. It was moved and seconded that the secretary

send to the doctors and dentists of Beaver, Ellis and Woodward counties invitations to attend their next meeting, which was held on October 30th. At this meeting round table discussions were in order.

APPLICATION BLANKS are now available for space in the Scientific Exhibit at the Cleveland Session of the American Medical Association, June 11th to 15th, 1934. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient.

The final date for filing application is February 26th, 1934. Any person desiring to receive an application blank, should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER, for the fifth time, offers \$300.00 as a first award and two honorable mentions for the best essay based upon original research work on any phase of goiter, presented at their annual meeting, Cleveland, Ohio, June 7th, 8th, 9th, 1934. Competing manuscripts must be in English and submitted to the Corresponding Secretary, Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Indiana, not later than April 1, 1934.

Dr. R. M. Howard, Oklahoma City, is President of this Association at this time and would be delighted to have manuscripts submitted by his Oklahoma colleagues.

#### BENIGN LESIONS OF THE FEMALE BREAST SIMULATING CANCER

Max Cutler, Chicago Journal A. M. A., Oct. 14, 1933), describes several innocent states of the breast which simulate cancer and discusses the diagnosis and treatment of some borderline conditions the exact nature and future course of which it is becoming increasingly difficult to estimate, as they are encountered in their earlier stages. The author believes that transillumination is a diagnostic aid in localizing duct papillomas in the breast. In some cases, however, the papillomas are so small that no shadow can be detected on transillumination. This is especially true when the discharge is essentially serous. In older women in whom a hemorrhage discharge from the nipple is more likely to be associated with duct carcinoma or in whom a duct papilloma is more likely to be complicated by carcinoma, especially in the presence of suggestive nodularity in the breast, wide surgical excision or local mastectomy is the safest method to adopt. In younger women in whom the presence of carcinoma is less probable and to whom the loss of the breast is of greater concern, the author does not feel justified in adopting such radical measures. On the other hand, he takes the view that to permit such a lesion to remain untreated is a dangerous attitude to assume. He treats younger women suffering from a serous or serohemorrhage discharge from the nipple, especially when localization of the lesion is impossible or uncertain, by means of interstitial irradiation (removable platinum needles). He concludes that this method should be even more efficacious in the treatment of duct papillomas or of early duct carcinomas. This method possesses the advantage of avoiding removal of the breast in young women to many of whom the surgical procedure constitutes a considerable psychologic shock. It possesses the disadvantage of not permitting microscopic confirmation of the diagnosis.



# ABSTRACTS «» REVIEWS «» COMMENTS AND CORRESPONDENCE

## DERMATOLOGY, X-RAY AND RADIUM THERAPY

Edited by William E. Eastland, M.D.  
Lain-Roland Clinic, M. A. Bldg, Okla. City

Colloidal Mercuric Sulphide: Clinical Study, Theodore K. Lawless, M.D., Chicago, Archives of Dermatology and Syphilology, Vol. 28, Number 4, October, 1933.

Numerous articles have been written in regard to this product. This one takes into consideration carefully tabulated results obtained by the author from a series of cases. With colloidal chemotherapy coming gradually to the front, it is interesting to review the author's results. Hereinbelow his comments and conclusions are quoted:

"1. The action of colloidal mercuric sulphide is similar to that of metallic mercury.

"2. The preparation is powerful and retains all the latent potentialities of metallic mercury.

"3. It is painless on administration and causes no palpable infiltrate.

"4. It acts very effectively on lesions of the mucous membranes.

"5. The slowness of its effects on primary lesions precludes its use in this manifestation.

"6. It does not present any preeminent superiority over other anti-syphilitic therapy in its ability to change the Wassermann reaction.

"7. Its action on the kidneys seems to be first a reduction in excretory function, then irritation and inflammation.

"8. It can be highly recommended as a supportive drug, used between courses of neoarsphenamine or neoarsphenamine and bismuth.

"9. As a treatment of assault, it should be aided by the supportive effect of arsphenamines and iodides.

"10. The co-administration of alkalies prevents complications and aids in their treatment.

"11. The drug is not wholly and immediately absorbed.

"12. The colloidal suspension is permanent.

"13. The dermal discolorations are disfiguring and most resistant to removal.

"14. The drug can be given safely both intramuscularly and intravenously. The latter method seems less likely to produce complications.

"15. It is effective in other conditions in which mercury is indicated, as lichen planus and verrucae.

"16. The lack of toxicity for the blood cells is noteworthy."

Roentgen Treatment of the Primary Lesion of Tular-emia, Harry Leonard Baer, M.D., Pittsburgh, Archives of Dermatology and Syphilology, Volume 28, Number 4, October, 1933.

Two cases are reviewed in which tularemia was present. In both instances the patient was seen three days after having pricked the finger while cleaning

rabbits, which resulted in a "grippy feeling," hyperpyrexia, and increased pulse rate. Locally, the lesion was swollen, throbbing, painful and marked lymphangitis extending to the axilla. The application of one-half of an erythema dose of X-ray was followed by hasty resolution of both local and constitutional symptoms.

The diagnosis was confirmed in each case by the agglutination test. It has been shown by Downs that the organisms invade the blood stream three or four days after infection and remain there until death. Since the author treated his cases on the third day he concludes that the X-ray treatment arrested the progress of the disease.

The Tuberculin Patch Test, Maurice Grozin, Am. Jour. Dis. Child., 46:17, (July), 1933.

The abstract below is quoted from the October, 1933, issue of the Archives of Dermatology and Syphilology:

"The tuberculin patch test described by the author is made by moistening a piece of adhesive plaster with 1 or 2 drops (0.06 or 0.1 gm.) of old tuberculin (Koch) and applying it to the skin, which has previously been cleaned with ether. A piece of adhesive plaster without tuberculin may be used as a control. A positive reaction is indicated by redness studded with papules and vesicles. In a series of 176 cases this tuberculin patch test was carried out simultaneously with the Pirquet test. The results of the patch test compared favorably with those of the Pirquet test as to reliability. As advantages over the Pirquet test, the author mentions painlessness, no need of instruments, lack of danger of infection, simpler technique, less time and ease of interpretation."

## EYE, EAR, NOSE and THROAT

Edited by Marvin D. Henley, M.D.  
911 Medical Arts Bldg., Tulsa

Cavernous Sinus Thrombosis of Otitic Origin—Report of a Case. Dr. Joseph G. Gilbert, Brooklyn, N. Y. The Laryngoscope, October, 1933.

A white female, age 43, gave a history of a right ear with a moderate amount of discharge for five months and some pain for several weeks. A week previous to observation she had a severe right-sided temporal headache. There were no chills. The past history was negative except for a chronic nasal discharge. Emesis took place the first time the day the patient came under observation. The right upper lid was swollen; the conjunctiva reddened; the eyeball exophthalmic; extraocular movements were limited; the pupil reacted to light and accommodation; the veins of the fundus were full and the optic disc was slightly blurred. The left eye had similar symptoms which were less marked. The nose showed no evidence of any acute infection but polyps were present in both sides. A purulent discharge was present in the right ear which was not increased when the right

jugular was pressed together. There was a positive ankle-clonus, Hoffman, Babinski, and Kernig and the knee jerks were hyper-active. The temperature ranged from 100.8-103 F. The spinal fluid was under 40 mm. pressure. Compression on the left jugular produced 55 mm. pressure; compression of the right jugular left the pressure at 40 mm. which definitely pointed to a blockage on the right. No bacteria were found in the spinal fluid. The R. B. C. was 4,400,000; the hemoglobin 85; the W. B. C. 10,800 with 86 polymorphonuclears. The roentgenogram examination showed a right mastoiditis. It was thought that the infection spread from the mastoid through the sigmoid through one of the petrosal sinuses to the cavernous sinus. The carotid venous plexus was also considered as a possible pathway of infection. Although the patient was considered a poor surgical risk operation was decided upon because of the persistent headache, vomiting and the definite mastoid infection. Operation showed all mastoid cells with pus. A greenish clot with free pus in the sinus and no bleeding down to the jugular bulb. Thrombosis was also present in the emissary vein. The character of the pus was streptococcus, staphylococcus aureus and a gram negative bacillus. The patient died twenty-four hours later. No autopsy was obtained. The paranasal sinuses were ruled out in this case as an etiological factor because of lack of evidence of an acute infection in the nose. Authorities differ on the percentage of middle ear disease and paranasal sinus infection in the etiology of cavernous sinus thrombosis. 22-40% followed middle ear disease while from 9-54% had their inception in the paranasal sinuses. The unusual point in this case is the infection of the cavernous sinus twenty weeks or so after the middle ear infection began.

**Chronic Paranasal Sinus Infection Relation to Diseases of the Lower Respiratory Tract.** Kern and Schenck, Philadelphia. Archives of Otolaryngology, October, 1933.

Frequently a sinus infection accompanies or follows the ordinary "colds" which we encounter daily. The bacterial invasion progresses by continuity of tissue and it is only a question of time until the infection is in the sinuses. If there are present in the nasal cavity polyps, nasal obstructions, etc., which interfere with aeration and natural drainage in addition to the already swollen and engorged turbinates and mucous membrane, it is easy to see how it would be possible for the ostia of the various sinuses to be completely closed over a period of several days with the resulting acute sinus infections. The author states that it is his belief that seventy-five per cent of the population have had at some time in their lives a protracted or a severe sinus infection. Repeated acute infections and interference with the natural drainage will impair the activity of the ciliated epithelium or destroy it entirely depending on the type, duration and severity of the infection. Chronic sinus infections are much more common than are usually surmised. Many times it is the competent chest man examining for a specific infection of the chest who first finds or suspects a sinus infection of probably years standing which had never exhibited any local or clinical signs or symptoms. In order to make their observations of some practical value a control group of apparently normal persons with no history of any nasal or respiratory infection for at least six months previous was chosen. The control group and the affected patients were chosen from the same general locality and their ages were within the same decade. According to observations recorded the incidence of a sinus infection was highest accompanying a bronchiectasis. The nasal infection was not as a

rule confined to one sinus. Any disease of the lower respiratory tract may have as its etiological factor a chronic sinus infection or the constant coughing up of large amounts of purulent sputum may infect sinuses hitherto not affected. Chronic pulmonary tuberculosis, chronic ulcerative tuberculosis with cavitation, mixed infection, and profuse purulent sputum, and posttonsillectomy abscess of the lung are some of the conditions included in this category. It is obvious that to attempt to clear up the respiratory infection is futile unless the sinus infection is also cleared up regardless of whether the sinus infection is primary or secondary. Bronchitis describes a condition most prevalent in youth which is characterized by an acute cold, fever, general malaise, cough, purulent sputum, mild leukocytosis and afternoon rise of temperature. There are usually a few rales in the lower lobe. Roentgenograms show the region of the hilus with increased trunk shadows and sometimes some central peribronchial consolidation. The primary focus of infection, the nasal sinuses, may sometimes be overlooked in a condition of this kind. Respiratory signs and symptoms disappear with the cure of the nasal infection. Patients subject to pollinosis, perennial nasal and bronchial hypersensitivity, allergic factors and asthma, are more susceptible to a sinus infection because of the continual irritation of the nasal mucous membrane over an extended period of time which produces a more fertile field for a bacterial invasion. From the study of several hundred cases the author makes an original observation that when nasal polyps are found the patient should be further observed from viewpoint of allergy.

**The Effect of Radical Antral Surgery on Bronchitic Asthma.** Warner and McGregor, Toronto, Canada. The Journal of Laryngology and Otology, September, 1933.

From the departments of medicine and otolaryngology, University of Toronto and Toronto General Hospital thirty-one asthmatic cases were selected for operation. Research work reported by previous investigators varies greatly in conclusions reached but have one point in common—failure to report on the condition of the patient over an extended period of time after operation.

A careful study was made of each patient before he was admitted to the group for operation. This study included negative protein skin tests, the washing out of both antra with saline solution and examination of the contents, the injection of lipiodol, and the making of roentgenograms. If there was a definite thickening of the mucoperiosteum the case was considered suitable. Strings of mucus and mucopurulent material were obtained by the irrigations. Diseases of the nasopharynx such as infected tonsils, nasal obstructions, etc., were ruled out by careful examination. The frontal, ethmoidal, and sphenoidal sinuses often showed some thickening of the mucoperiosteum but it was always greatest in the antra. Local anesthesia was employed in nearly all the cases. An opening was made in the anterior wall of the antrum just above the gum margin. An attempt was made to remove all mucoperiosteum by means of a periosteal elevator. An intranasal opening was made in the inferior meatus. The part of the inferior turbinate obstructing the intranasal opening was removed. The ethmoids were not touched as it was thought these could be dealt with later if it was deemed necessary. The authors' conclusions are:

1. Thirty-two cases of bronchitic asthma were treated by radical antra operation. They were followed closely for from six months to two and a half years, and in two cases only were results decidedly



favorable and permanent to date. All cases had a period of freedom from asthma following the operation, but relapsed later. The longest period was twenty-seven months, the shortest two weeks, and the average of all cases four months. These results are so poor that radical antral surgery undertaken for indications as outlined should be recommended with a great deal of hesitation.

2. There were no peculiarities in those cases apparently benefited for a long time, which would enable one to decide for certain on which cases to operate. The cases apparently benefited had had asthma for a relatively short time, and presented markedly thickened mucoperiosteum.

3. Results of the treatment of asthma by operative procedure on the nose should not be given until the patients have been observed for a long period of time following the operation.

4. All cases but one ceased to have asthma for two weeks following the operation. This fact let to the operation being performed as a life-saving measure in one instance.

5. Five cases of chronic bronchitis were treated by radical removal of thickened mucoperiosteum and were observed for a period of two years. No benefit was seen to be obtained as a result of the operation.

Patients whose chief complaint was frequently of colds received no local benefit from the surgery done. Where there were definite clinical signs and symptoms of antrum infection the patients were well satisfied and the local effect of the operative work was good. It is still a moot question as to whether the thickened mucoperiosteum can in itself serve as a focus of infection.

**The Proper Time For Operation in Strabismus.** John Hughes Dunnington, M.D., New York. *Archives of Ophthalmology*, October, 1933.

The ophthalmologist is many times asked to give a definite age for operating patients with strabismus. A fair answer cannot be given without taking into consideration many possibilities. The most important of these is a careful diagnosis of the motor anomaly, including an accurate measurement of the amount of deviation at twenty feet (6 M.) and at thirteen inches (33 cm.). Of the various methods of examination the author prefers the Duane screen and parallax test because of the accuracy obtained. Other tests cannot measure a lateral and a vertical deviation simultaneously, or give reliable information concerning the action of the deviation in the six cardinal directions of gaze. The amount of deviation in each of the different directions of gaze must be known and attention should be given to the presence or absence of diplopia or binocular vision. It is evident that the estimation and correction of the refractive errors are most important, although this is not the etiology of all muscular ills. Careful measurements of deviation both with and without correction is necessary. The effect of orthopic exercises and the value of all non-operative measures should be considered. An operation is advised only when these methods have failed to give relief. Occasionally a decision can be made at once but generally several weeks or months and in rare cases a year or two is required. Sometimes the physician will postpone the inevitable operation until a set age because of the necessity of a general anaesthetic which makes the muscular measurement more difficult. However if he is thoroughly familiar with the existing conditions the operation may be performed with greater confidence and the danger reduced to a minimum.

The ophthalmologist may also deter operating because in rare instances esotropia spontaneously disappears. This is caused by the constitutional changes in the structure of the orbit; the power of the external rectus muscle increases while that of the internal rectus muscle decreases. Such a disappearance is so unusual that it is hardly justifiable to delay operating for years because of this slight possibility. The fear of a secondary divergence is another cause for delay but the majority of these cases result from improper operative technic rather than from operation at too early an age. This occasionally does occur but the corrective operation is not particularly difficult.

Secondary muscular changes occur in squints of long duration. The overactive muscles become rigid and the underactive ones become stretched and weakened, lessening the chance for success, so the earlier the operation is performed the more favorable are the muscular conditions. Post-operative diplopia is not so apt to arise in early operation of strabismus and if it does occur it is more easily overcome in early childhood than in later life. "The ability to maintain fusion is also greater after an early removal of the deviation." Strabismus is a great handicap to a child not only physically but mentally. They are teased by playmates and reminded by parents of their weak eyes so it is no wonder that they become neurotic children. This in itself is the biggest reason for operating early, regardless of age.

## SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from  
LeRoy Long Clinic  
714 Medical Arts Bldg., Oklahoma City

**Gynecological Aspects of the Etiology and Treatment of Chronic Mastitis.** Howard C. Taylor, Jr., New York. *Surgery, Gynecology and Obstetrics*, November, 1933, Volume LVII, Number 5, Page 627.

Dr. Howard C. Taylor, Jr., has studied a group of 102 cases of so-called chronic mastitis of the type characterized by pain, ill defined nodules and diffuse swelling. They were all taken from the breast clinic of the Memorial Hospital within a period of 2 years time, and pain was used as the most important symptom of both selection of cases and follow-up of observation or treatment. Dr. Taylor has very carefully outlined the clinical aspects of this disease, pointing out the physical characteristics of the breast and the cyclic variations in relation to menstrual function. He has also discussed the pathology and the etiology of such conditions, having tabulations to represent: 1. The age incidence. 2. The marital status and fertility. 3. Characteristics of breast pain (unilateral, bilateral, premenstrual, constant or irregular). 4. The consistency of breast tissue. 5. The type of previous treatment. 6. Cases ascribing onset of painful breast to definite incident. 7. Menstrual type at time of first observation. 8. Types of lactation. 9. Interval between birth of last child and admission to breast clinic. 10. Summary of pelvic lesions. 11. Pathology of ovaries as noted at operation.

The treatment of these 102 cases was by 5 methods, and the gage for effectiveness of the treatment was the pain, rather than other minor variations.

Twenty cases were treated by observation alone, and in this group it was demonstrated that breast symptoms have a marked tendency to spontaneous improvement. It was observed that following the physiological changes of pregnancy or the menopause,

improvement may be especially marked, though in single women under thirty the symptoms are especially persistent.

Others were treated by necessary pelvic operations, while others had non-operative gynecological therapy. These cases with both operative and non-operative gynecologic treatment showed a somewhat greater percentage of cures than observation alone. This study recommends the correction of important pelvic lesions as the first step in the treatment of diffuse mastitis of this type.

Other cases were treated by irradiation of the ovaries, and this means was found to be very effective, but naturally is applicable only to certain cases which fall into 3 groups: 1. Women over 45 or in those over 40 in whom the onset of the menopause is already suggested by irregularity of the periods. 2. Women in whom the uterus has been removed. 3. Women with coincident pelvic disease which itself requires irradiation of the ovaries. It is pointed out in regard to irradiation of the ovaries that in their later cases much smaller doses of irradiation were used with almost equally good results.

The other form of treatment was by ovarian substance by mouth as recommended in the favorable reports of Cutler. This series of cases showed that such treatment by the older forms of ovarian extract given by mouth produced the same percentage of cured and improved cases as in the group where observation was the only treatment. It is pointed out that a trial is being made of the more potent modern preparations of follicular and anterior pituitary hormones, especially in the cases associated with disturbed menstruation.

**Comment:** Though this is a small series of cases for statistical purposes, it has been carefully handled and has a definite importance in consideration of this disease. Of course, all gynecologists appreciate the wisdom of either operative or non-operative gynecological therapy where indicated in such cases. Most have appreciated the value of irradiation of the ovaries but have also appreciated its limitations and hesitate to use it even in smaller dosages in young women.

The striking point of this summary is the fact that the ovarian extracts and residue given by mouth gave practically the same results as observation alone. I am sure from experience which we have had in the past two years that by careful investigation of patients we may have somewhat better results with the intelligent use of the newer and more potent preparations.

—Wendell Long.

**Histological Grading in Carcinoma of Uterine Cervix.** Louis H. Jorstad, M.D., and Eugene S. Auer, M.D., St. Louis, Mo. *Surgery, Gynecology and Obstetrics*, November, 1933, Volume LVII, Number 5, Page 583.

These authors have studied a group of cases and have consulted the literature in an attempt to evaluate the significance of the grading of carcinoma of the cervix. There are 2 types of grading used in all carcinomata. One of these is a histological grading, whereas, the other is a clinical grading or classification.

In this group of cases the Broder's scheme of dividing tumors into 4 grades histologically was employed.

There is considerable discussion in the article about

the method of classification and the portion of the tumor to be employed as the microscopic specimen.

The significant conclusion from the study is the fact that histological grading alone is of no prognostic value. Because of the somewhat similar carcinomata of the lip it has been suggested that grading or cervical cancer would be as effective as the grading of cancer of the lip, but they point out that the clinical grouping of these two areas of carcinoma show that there are very few cases of early cancer of the cervix who come for treatment, whereas, there are many early cases of cancer of the lip who come for treatment. Consequently, they feel that without proper correlation of this clinical classification the two cancers cannot be considered as similar in regard to the benefits of histological grouping.

They have found that the group 4 and group 3 carcinomata of the cervix (which are the undifferentiated, rapidly growing types) with the same amount of radiation as in group 1 more frequently develop fistulae into the bladder or rectum. In other words, the histological grading is of some assistance in determining the technic and the amount of therapy.

They have found that the "clinical grouping and extent of disease is more important than grading from a prognostic standpoint." The clinical grouping used is that of the Schmitz classification. This briefly divides cancer of the cervix into groups as follows:

Group I. Malignancy is confined to the uterine cervix.

Group II. Malignancy has spread to the adjacent vaginal wall.

Group III. Uterus is still movable, but there is beginning thickening of one or both broad ligaments.

Group IV. Uterus is fixed.

**Comment:** It has been proven by the many reports in the treatment of cancer of the cervix that clinical grouping was of tremendous importance in determining prognosis. There is little question of its value.

With the many claims for the importance of histological grading in cancer in other locations many men have attempted to demonstrate its application to cancer of the cervix, but from the standpoint of the prognosis or the ultimate outcome for the patient histological grading has proved of very little value. Its importance in determining the type and character is apparently without question.

—Wendell Long.

**Supra-Patellar Ruptures of the Quadriceps Femoris (Les Ruptures Sus-Rotuliennes du Quadriceps Fémoral)** by Ch. Lenormant and Claude Olivier, La Presse Medicale, October 11, 1933.

This is a very long and exhaustive article on a very rare condition. The authors say at the outset that they have been able to collect only about 100 cases.

The condition under consideration includes solutions of continuity of any part of the quadriceps femoris or its tendon which are produced by muscular contraction.

The history of the cases collected show that the ruptures are nearly always in the lower part of the muscle. Sometimes only one or two of the four muscles are involved in the rupture.

Ruysch is credited with having made the first two observations in connection with this injury, but the date is not given. Demarquay wrote about it in 1842,



and Binet collected some cases from the literature in 1858.

McBurney is given credit for the first suture of a ruptured quadriceps in 1883. In 1905 Quenu and Duval called attention to the lesion and the necessity for proper surgical treatment.

Attention is called to the anatomical fact that the four muscles of the quadriceps have short multiple, fleshy fibers, with long tendons. One conceives, therefore, that they would break more often in the fibrous portion, and particularly in the lower part—that is, at the point of convergence of the fibers, which is near the patella, and involves the tendon more often than the muscles proper.

The accident happens most often in patients after 40 years of age. In younger patients rupture of the quadriceps or its common tendon is more often associated with direct violence. It has been observed that those who have some loss of integrity of the vascular system are more liable to the accident. A number of the cases reported have had an arterio-sclerosis. Some of them have had chronic nephritis, diabetes or syphilis.

The symptoms and signs are pain at the time of the accident that usually disappears after a few hours, provided the leg is kept in a position of immobilization. If the patient tries to use the leg the pain reappears. There is swelling of the lower thigh, and this swelling often masks the depression in the ruptured muscle or tendon, but on palpation the depression can always be felt. There is frequently an echymosis about the point of rupture.

The ideal treatment is suture of the rupture or ruptures. This may be done through a vertical incision or a horseshoe incision. In either case the incision ought to be long enough to permit necessary exploration. The operation may be done under either local or general anesthesia.

—LeRoy Long.

#### Serotherapy For Gangrenous Appendicitis and Peritonitis (Sérothérapie de l'Appendicite Gangreneuse et de la Peritonite) by M. Weinberg, *la Presse Medicale*, October 4, 1933.

This is a report of Weinberg at a meeting of The Academy of Sciences, Paris, August 16, 1933. He believes that researches made under his direction since the beginning of the War warrant the two following statements: (a) It is possible to cure polymicrobial infection by a specific polyvalent serum; (b) It is possible to cure a polymicrobial disease by neutralizing the dominant pathogenic microbe through the use of a specific serum.

Knowing that the bacillus *aerogenes capsulatus* (bacillus *perfringens*) is often a part of the microbic flora of appendicitis, the author reasoned that the employment of anti-gangrenous serum might be of service in the treatment of gangrenous appendicitis. He reports the use of a polyvalent antigangrenous serum by both intraperitoneal and subcutaneous injections in 96 cases of grave appendicitis, 52 acute non-gangrenous and 44 gangrenous cases, with two deaths.

In a later series of 152 cases of appendicitis, "complicated often by generalized peritonitis," the author and his confrere, Laquiere, employed, in addition to the anti-gangrenous serum, a complementary serum active against several aerobic and anaerobic microbes, including especially the colon bacillus.

In this series of 152 cases there were 90 cases of

gangrenous appendicitis with perforation in 42 cases. In this group of 90 cases where the mixed serum was employed there were three deaths.

The author insists upon large doses introduced into the peritoneal cavity, subcutaneously and intramuscularly.

The report is terminated by the expression of a very strong conviction that the mixture of anti-gangrenous serum and a serum to combat the action of the colon bacillus is of even more value in gangrenous appendicitis and peritonitis that arises in connection with it, than the use of the anti-gangrenous serum alone.

At a meeting of the Academy of Sciences on August 21st. another report dealing with the same problem was made by M. H. Vincent. The title of this report is: "Anticolibacillus Serotherapy." The results of its employment in grave gangrenous appendicitis with local or generalized peritonitis (La sérothérapie anticolibacillaire. Resultats de son emploi dans les appendicites gangreneuses graves avec peritonite locale ou generalisee).

Vincent makes the statement that the colon bacillus secretes a number of toxins, especially the "toxine enterotrope," which fixes itself electively upon the liver cells, the biliary apparatus and the intestine. This toxin plays an important role in the toxic form of appendicitis or that complicated by peritonitis. He believes that the plurality of the toxins of the colon bacillus explains the variety of intestinal symptoms, symptoms referable to the liver, and nervous and psychopathic symptoms which so frequently accompany infections due to the colon bacillus. It is his opinion that in appendicitis complicated by peritonitis, where the prognosis is so often fatal, it is the colon bacillus which is the most dangerous infectious agent.

According to the author, acute appendicitis ought to be considered an infectious disease due to a specific, and as yet unknown, virus, peculiar to man. In support of this conception, he calls attention to the endemo epidemic incidence in certain families. He advises the use of the anticolibacillus serum as an adjuvant in connection with proper surgical operation, because it inhibits the colon bacilli that escape from the intestine and neutralizes their toxins with great rapidity.

Vincent reports that in the cases of 200 patients in which operations have been done for appendicitis, and anticolibacillus serum employed at the same time, there have been no deaths, notwithstanding the operation was done in three patients who were in extremis.

Comments: While these reports may be tinged by the enthusiasm of the authors, they call attention, to a vital matter. It is understood that appendicitis is a surgical disease, but there is at least serious question as to whether surgeons take advantage of the helpful procedures in connection with the treatment of patients who have infections beginning in the appendix. Therefore, reports like these should receive very careful consideration.

—LeRoy Long.

## UROLOGY and SYPHILOLOGY

Edited by Dr. S. D. Neely, M.D.  
Muskogee, Okla.

**Caudal Anaesthesia in Children, Meredith Campbell, Journal of Urology, August, 1933, Page 245.**

The author reports 83 cases of caudal anaesthesia in children, the anaesthesia being complete in 80% and a failure in 10%, and he states that the 10% failures was due to him and not the method. A severe reaction was noted in one case, the child recovering in forty-eight hours. He describes the usual technic for caudal anaesthesia, stating that he uses 8 to 12 c.c. of 2% novocaine solution depending on the age and size of child, and that he waits at least fifteen minutes before trying to instrumentize them. Because urethral manipulation causes little or no pain in girls he does not use this method, but has confined this to boys four years of age and over. Contra-indications are (a) tender age; and (b) hyperirritability.

**Sodium Citrate Solution for Preventing Formation of Blood Clots in the Bladder. A. M. McClellan, Jour. of Urology, August, 1933, Page 251.**

The author uses a 3% solution of sodium citrate, and has employed this in 43 operations for enlarged prostate, 20 suprapubic prostatectomies, 19 resections and 2 Caulk punches. 25 c.c. of the solution is left in the bladder after operation, and this is changed P. R. N., as the urine gets over bloody. The use of this solution has eliminated the formation of blood clots in the bladder, and the plugging of catheter in every case. All blood clots must be removed before first instilling this solution as the solution will not aid in disorganizing the already formed clots.

**Transurethral Removal of Prostatic Stones With Simultaneous Revision of Prostate. Leo L. Michel, Journal of Urology, August, 1933, Page 253.**

The author reports one case in which by means of resectoscope he was able to remove a nest of 14 prostatic stones and resect the bladder neck at the same time.

**Fatality After Intramuscular Injection of Bismuth. J. F. Schamberg, and C. S. Wright, Archives Derm. and Syph. June, 1933, Page 969.**

They state that 75,000 injections of bismuth have been given in the past without a single serious manifestation. Beerman in 1932, reported 35 deaths from the use of bismuth in syphilis collected from the literature. The authors report one case, a male aged 51 years, who died within twenty-five minutes after an intramuscular injection of 100 mg. of bismuth salicylate. This was the sixteenth injection, and the usual method of aspiration of syringe was made before injection. Patient evidently did not die with pulmonary embolism, but autopsy was not done. Epinephrine intravenous, intramuscular and intracardiac were all three tried. The authors state that symptoms following injections was of a colloidoclastic shock.

**A Brief Review of Fever Therapy in Neurosyphilis. Harry Beckman, Archives of Derm. and Syph., September, 1933.**

The author discusses the different methods of producing fever for therapy in the treatment of neurosyphilis, and summarizes as follows. Among all methods of inducing fever for treatment of dementia

paralytica, the induction of tertian malaria by direct injection of blood from an infected person remains the method most employed in institutions. The use of quartan and subtertian malarial infection is being experimented with in people who do not respond to tertian. Statistical compilations show that the patient's chance of complete recovery through malarial therapy is about 20%, but analysis of figures indicate 30% to be more correct. In tabes and neurosyphilis of diffuse type immediate and marked improvement is sometimes accomplished by malaria therapy. Relapsing and rat bite fever are inferior to malaria. The use of typhoid-paratyphoid vaccine for production of fever is probably one of the best methods for fever therapy by practitioners outside of institutions. The use of sulphur is probably the second choice. Diathermy and related physical therapy methods are apparently effective, and replace malaria in some institutions but are restricted in that they are used only by trained physical therapists.

**Neurosyphilis: An Analysis of Vanderbilt University Hospital Material Over a Period of Seven Years. Denman and Morgan, Southern Medical Journal, September, 1933, Page 809.**

The authors state that during the past seven years 335 patients with undoubted neurosyphilis have been observed at Vanderbilt Hospital, and from the records of these cases he draws the following conclusions: The incidence of patients with syphilis who had neurosyphilis was 6.8% at this clinic. 43.8% had parenchymatous lesions, the remainder were classified as meningo-vascular. Had routine lumbar puncture been performed on every patient entering clinic the incidence would have been higher because of an increase in the incidence figure for asymptomatic neurosyphilis. The luetic white is 3.8 times more prone to develop neurosyphilis than a leutic negro. The colored female is relatively immune to neurosyphilis. Neurosyphilis is manifest most frequently between the ages of 20 and 50 years. A history of a primary or secondary luetic lesion was present in 52.2% of cases. History of previous antiluetic treatment 42.6%. History of positive Wassermann previously 36.7%. Cranial nerve involvement was present in 31.6% of cases. Optic nerve involvement was about equally divided between neuritis and atrophy. Headache was the most common symptom, pupillary disturbances the most commonly encountered sign. 74% showed a positive blood Wassermann, 92% showed abnormal findings in the spinal fluid. The cerebro-spinal fluid was positive in 100% of asymptomatic and neurore-current cases.

## METABOLIC AND THERAPEUTIC STUDIES IN MYOPATHIES, WITH ESPECIAL REFERENCE TO GLYCINE ADMINISTRATION

Meyer M. Harris and Erwin Brand, New York (Journal A. M. A., Sept. 30, 1933), carried out metabolic and therapeutic studies in a group of muscular and neuromuscular conditions. The effect on creatine metabolism of the feeding of glycine and the other amino-acids which go to form glutathione is reported. These results were further substantiated by experiments in which glycine and glutamine were withdrawn from the metabolic mixture by the feeding of benzoic acid and phenylacetic acid, respectively. The effect of a number of other substances is indicated. The value of the study of the metabolic effects of creatine and glycine administration as an aid to diagnosis in muscular and neuromuscular disease is pointed out. The therapeutic effects of prolonged glycine administration are reported and other lines of investigation indicated.



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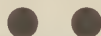
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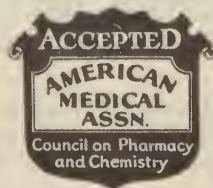
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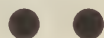
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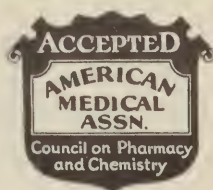
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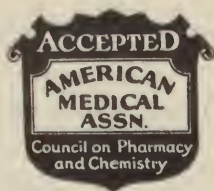
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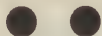
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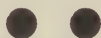
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